REPLACEMENT SHEET

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PATENT & TRADEMARK OFFICE

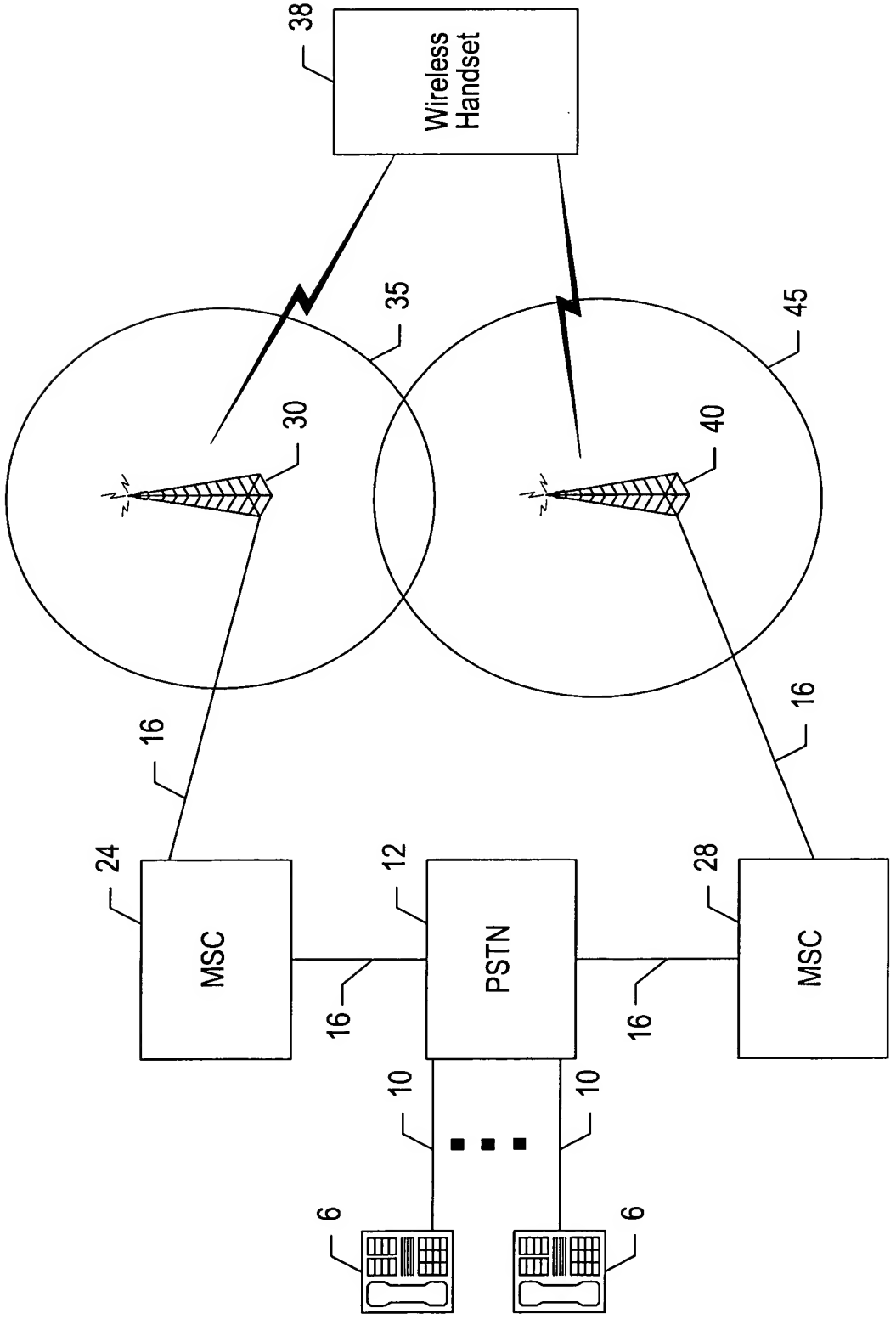



FIG. 1
(PRIOR ART)

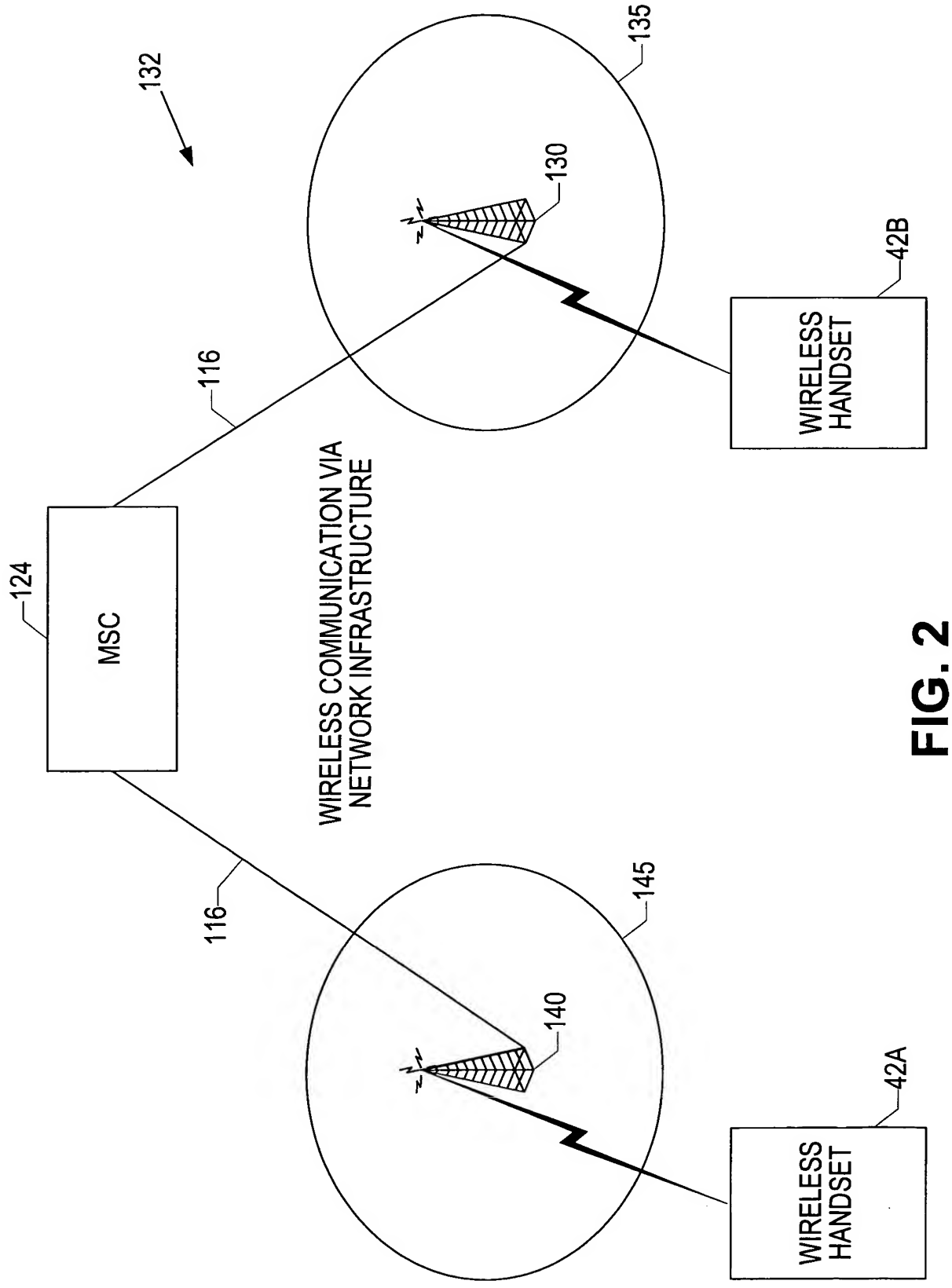

132
135
130
42B
WIRELESS HANDSET
116
WIRELESS COMMUNICATION VIA NETWORK INFRASTRUCTURE
124
MSC
116
145
140
42A
WIRELESS HANDSET

FIG. 2

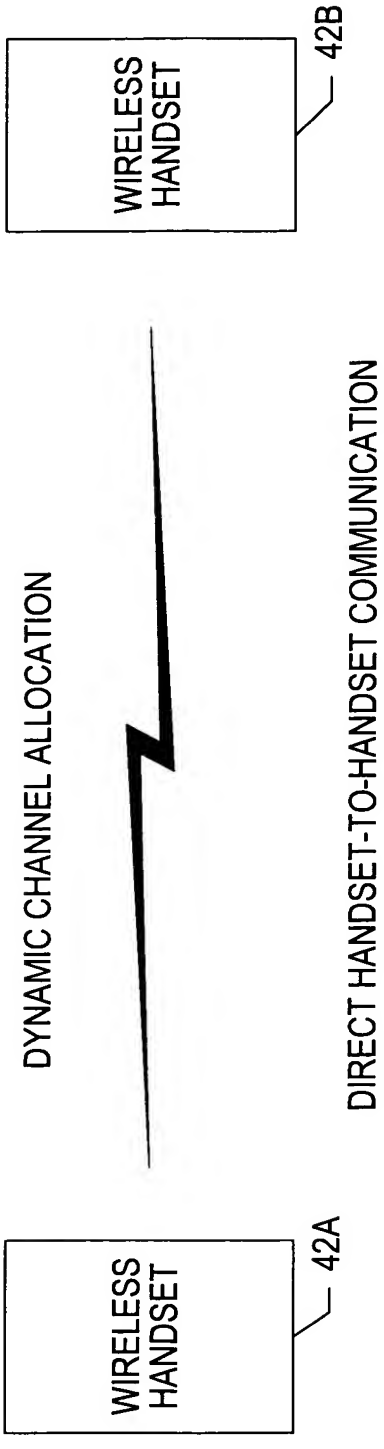

WIRELESS HANDSET
42B
DYNAMIC CHANNEL ALLOCATION
DIRECT HANDSET-TO-HANDSET COMMUNICATION
WIRELESS HANDSET
42A

FIG. 3

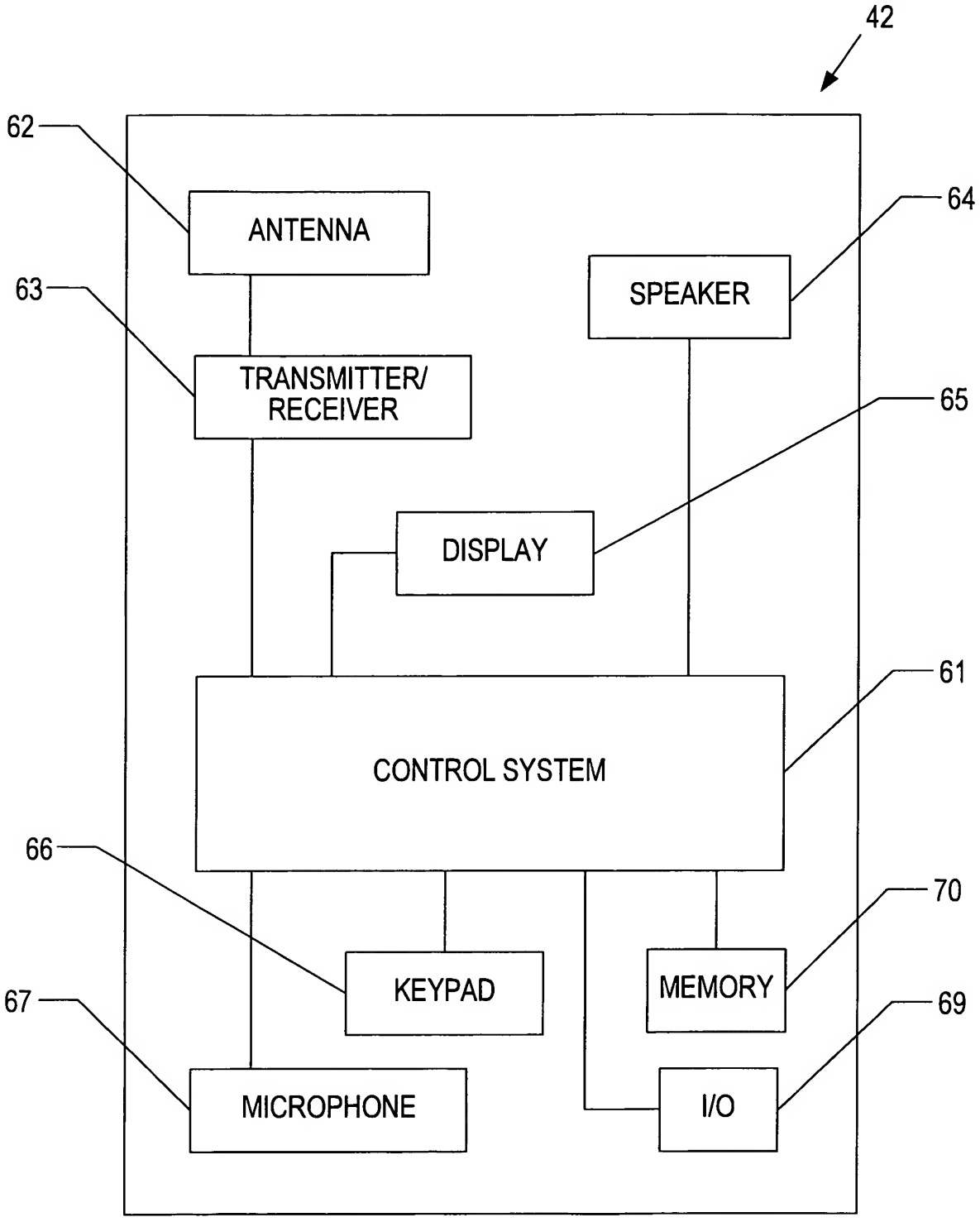

42
62
ANTENNA
64
SPEAKER
63
TRANSMITTER/
RECEIVER
65
DISPLAY
61
CONTROL SYSTEM
66
70
KEYPAD
MEMORY
67
69
MICROPHONE
I/O

FIG. 4A

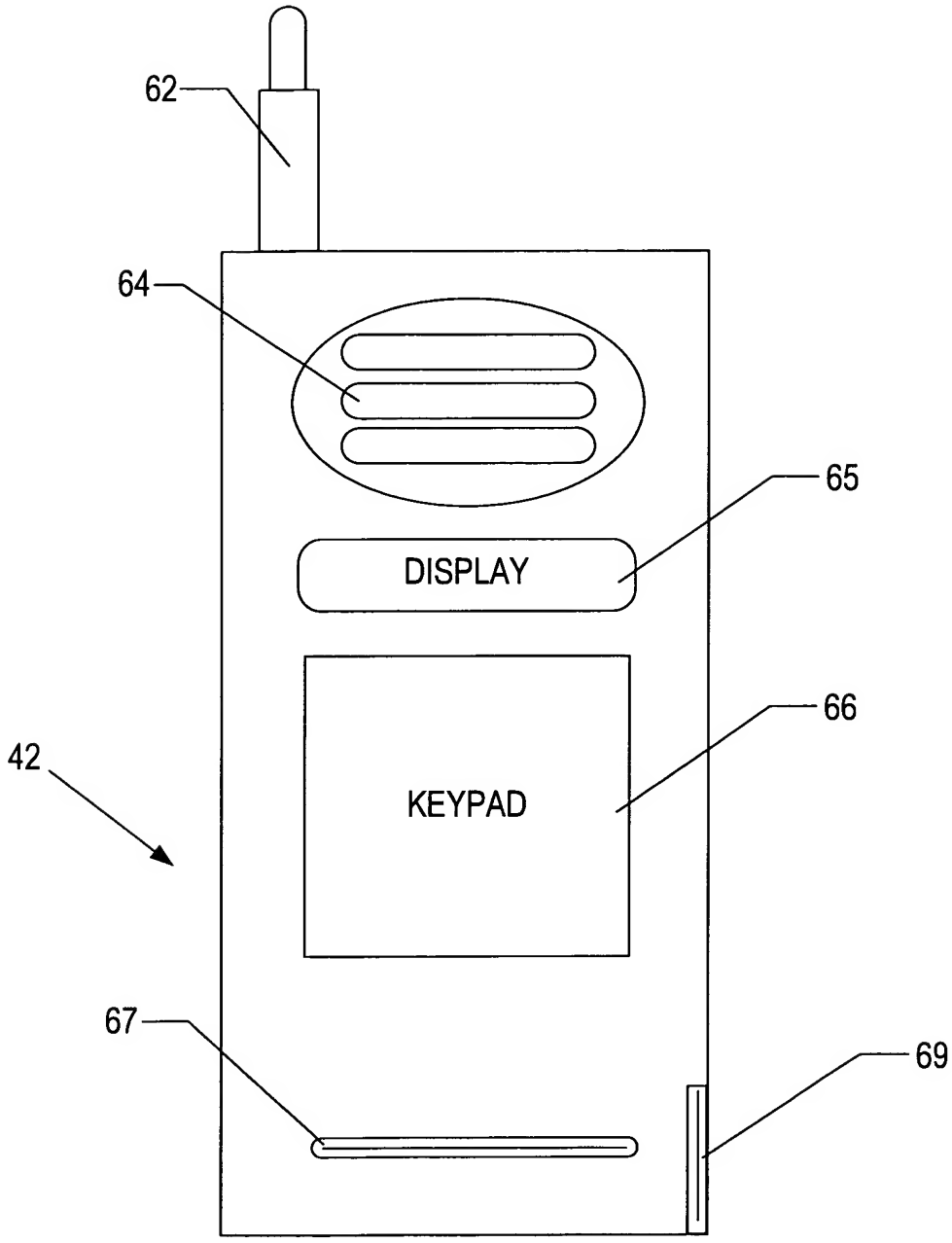



FIG. 4B

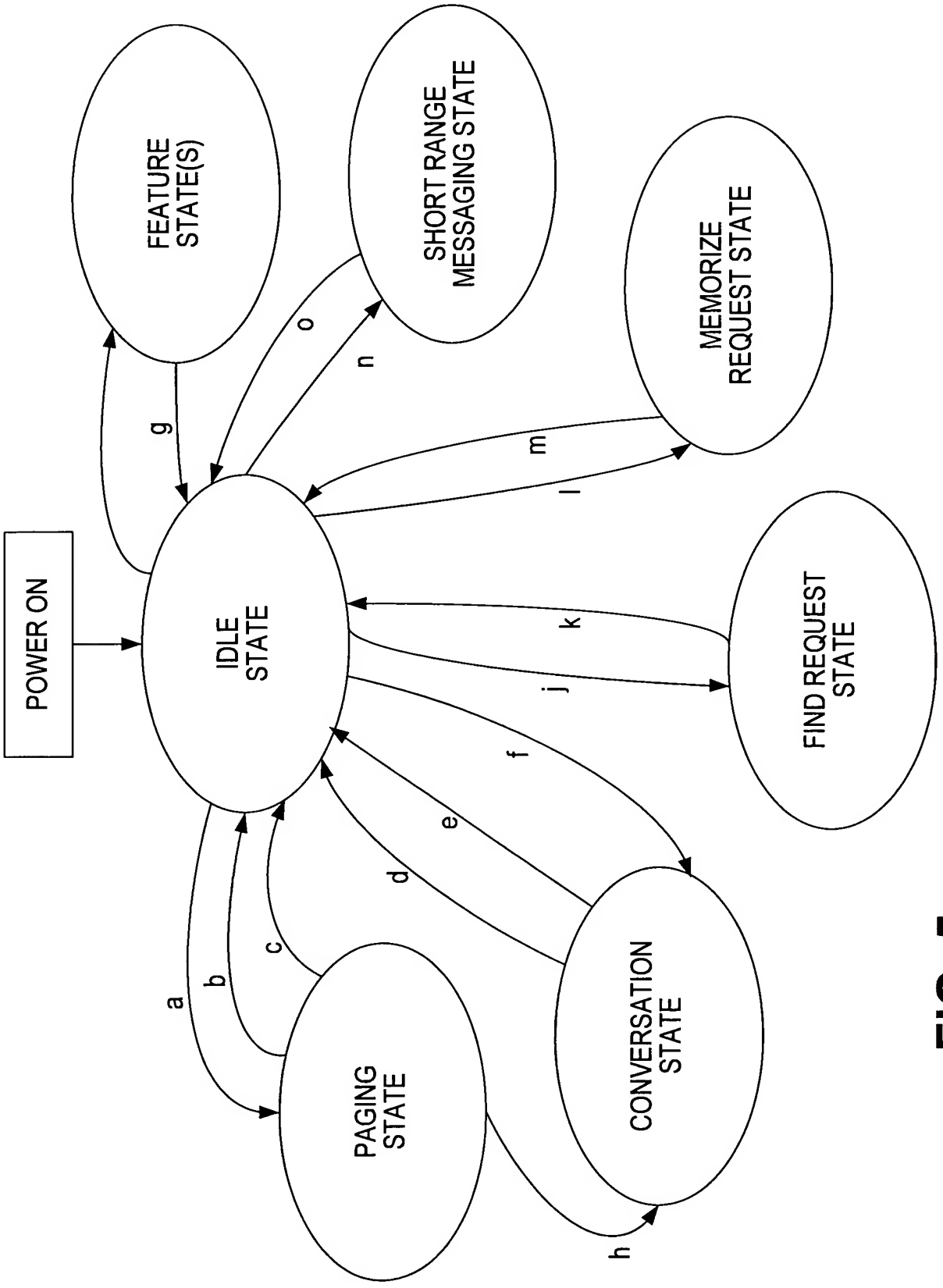

POWER ON
IDLE STATE
FEATURE STATE(S)
SHORT RANGE MESSAGING STATE
MEMORIZE REQUEST STATE
FIND REQUEST STATE
PAGING STATE
CONVERSATION STATE
a
b
c
d
e
f
g
h
j
k
l
m
n
o

FIG. 5

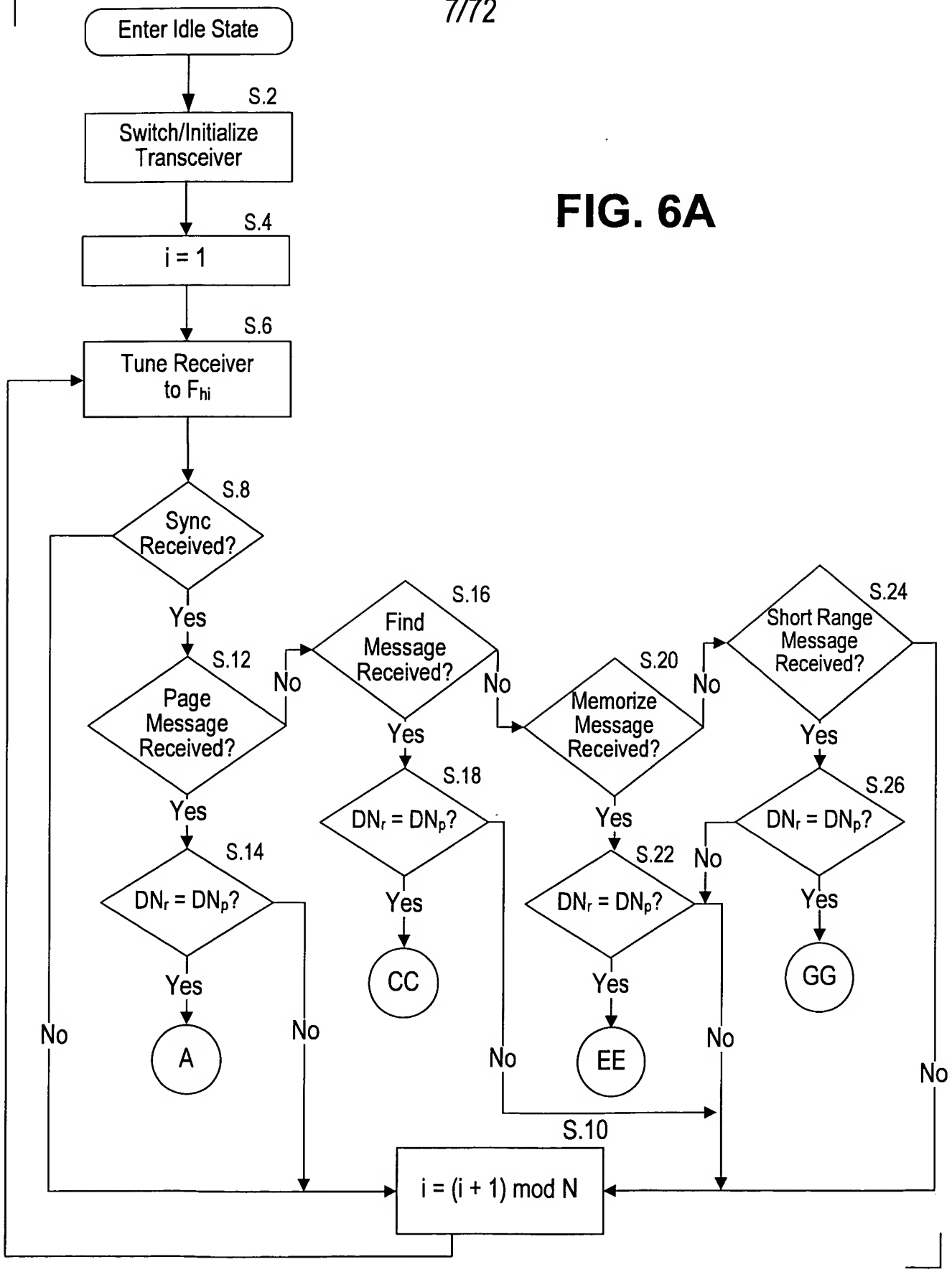

Enter Idle State
S.2
Switch/Initialize Transceiver
S.4
i = 1
S.6
Tune Receiver to $F_{hi}$
S.8
Sync Received?
Yes
No
S.12
Page Message Received?
Yes
No
S.14
$DN_r = DN_p$?
Yes
No
A
S.16
Find Message Received?
Yes
No
S.18
$DN_r = DN_p$?
Yes
No
CC
S.20
Memorize Message Received?
Yes
No
S.22
$DN_r = DN_p$?
Yes
No
EE
S.24
Short Range Message Received?
Yes
No
S.26
$DN_r = DN_p$?
Yes
No
GG
S.10
i = (i + 1) mod N

FIG. 6A

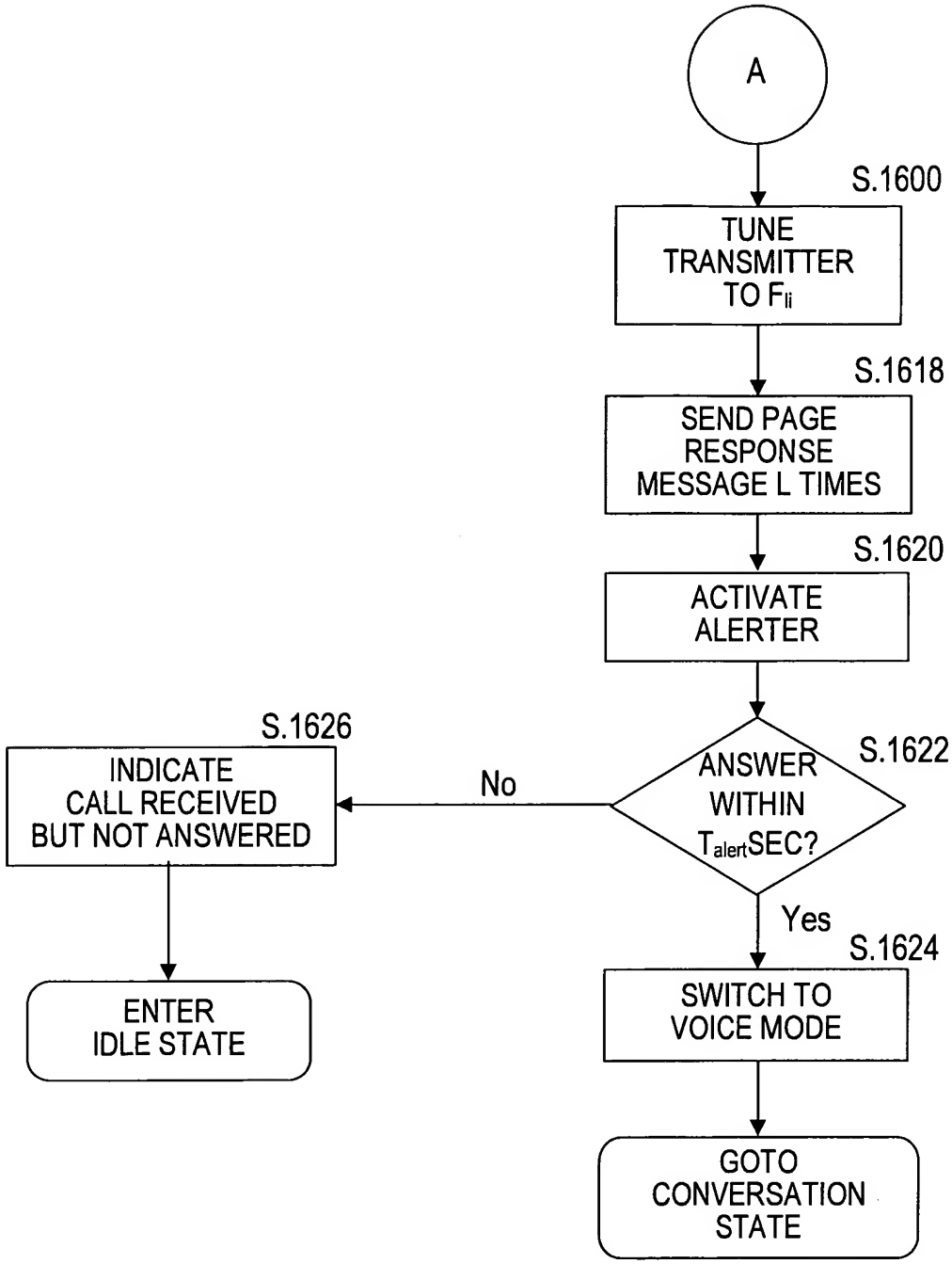

A
S.1600
TUNE TRANSMITTER TO $F_{li}$
S.1618
SEND PAGE RESPONSE MESSAGE L TIMES
S.1620
ACTIVATE ALERTER
S.1622
ANSWER WITHIN $T_{alert}$SEC?
No
S.1626
INDICATE CALL RECEIVED BUT NOT ANSWERED
ENTER IDLE STATE
Yes
S.1624
SWITCH TO VOICE MODE
GOTO CONVERSATION STATE

FIG. 6B

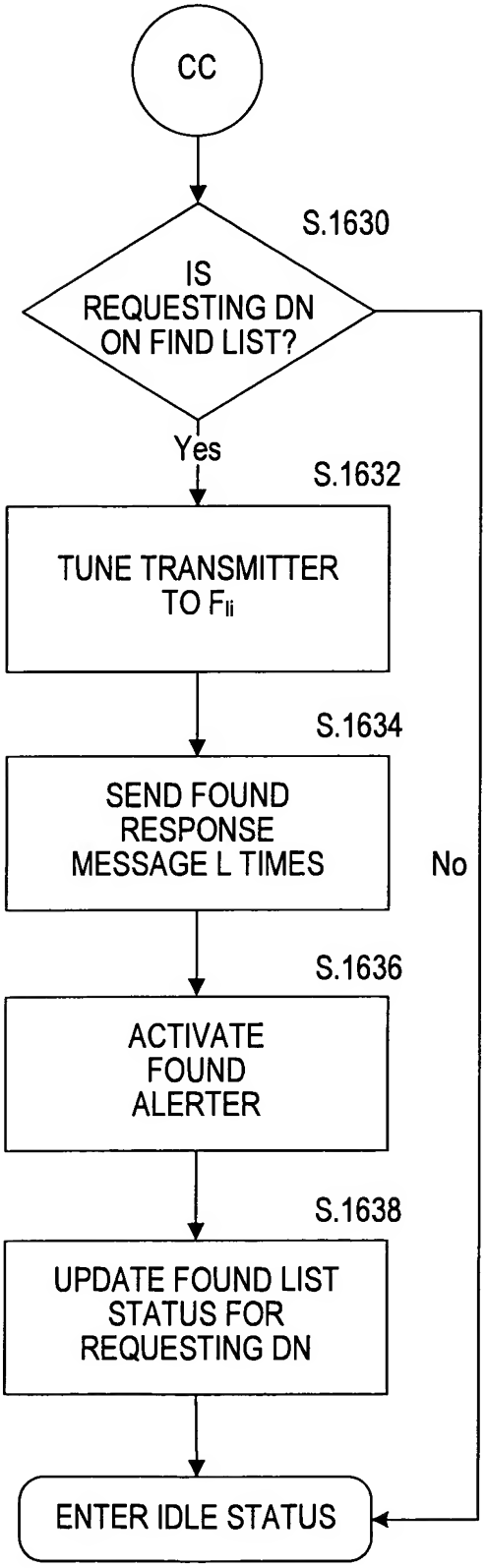

CC
S.1630
IS REQUESTING DN ON FIND LIST?
Yes
No
S.1632
TUNE TRANSMITTER TO $F_{li}$
S.1634
SEND FOUND RESPONSE MESSAGE L TIMES
S.1636
ACTIVATE FOUND ALERTER
S.1638
UPDATE FOUND LIST STATUS FOR REQUESTING DN
ENTER IDLE STATUS

FIG. 6C

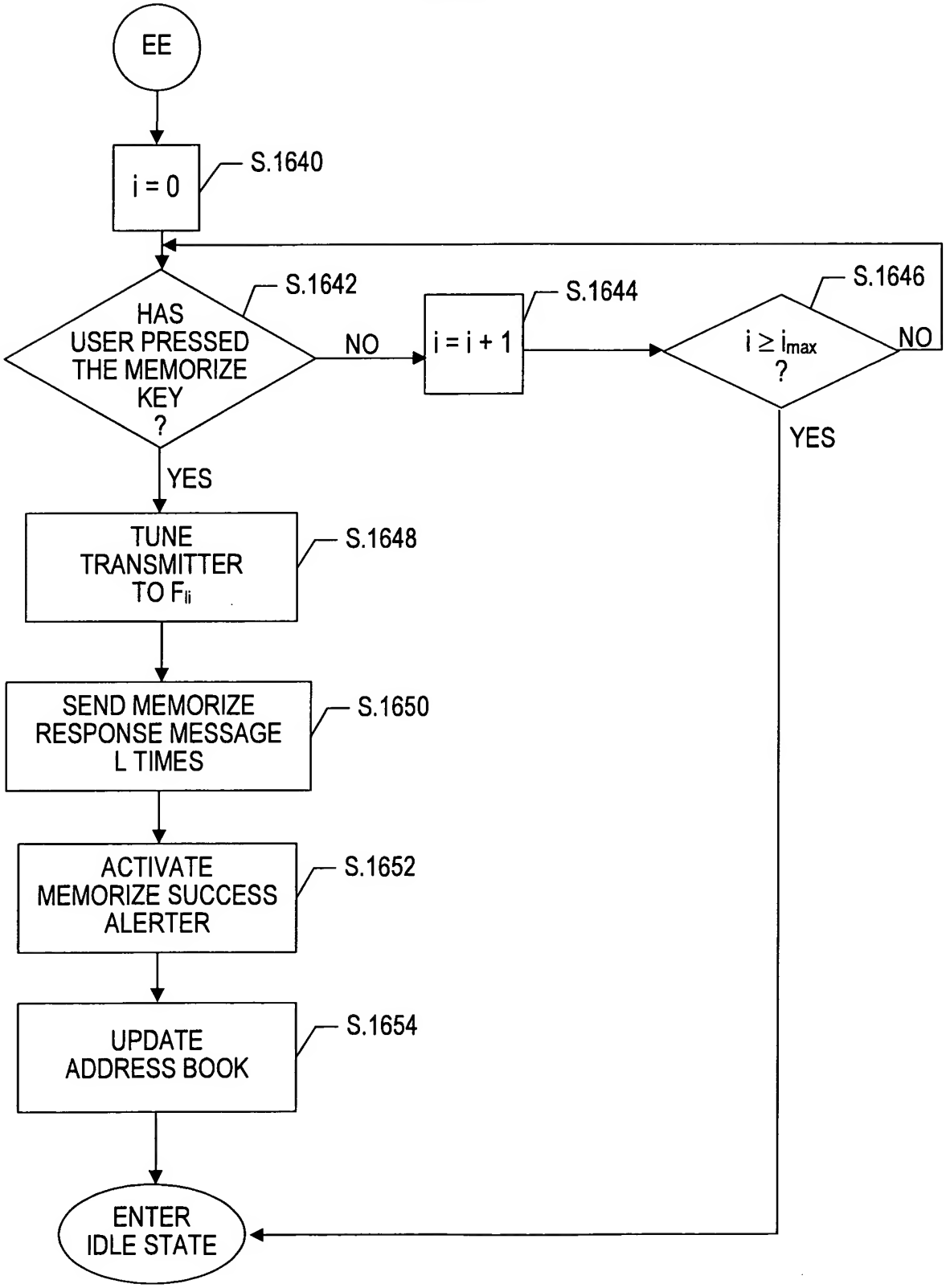

EE
i = 0
S.1640
HAS USER PRESSED THE MEMORIZE KEY ?
S.1642
NO
i = i + 1
S.1644
i ≥ imax ?
S.1646
NO
YES
YES
TUNE TRANSMITTER TO Fli
S.1648
SEND MEMORIZE RESPONSE MESSAGE L TIMES
S.1650
ACTIVATE MEMORIZE SUCCESS ALERTER
S.1652
UPDATE ADDRESS BOOK
S.1654
ENTER IDLE STATE

FIG. 6D

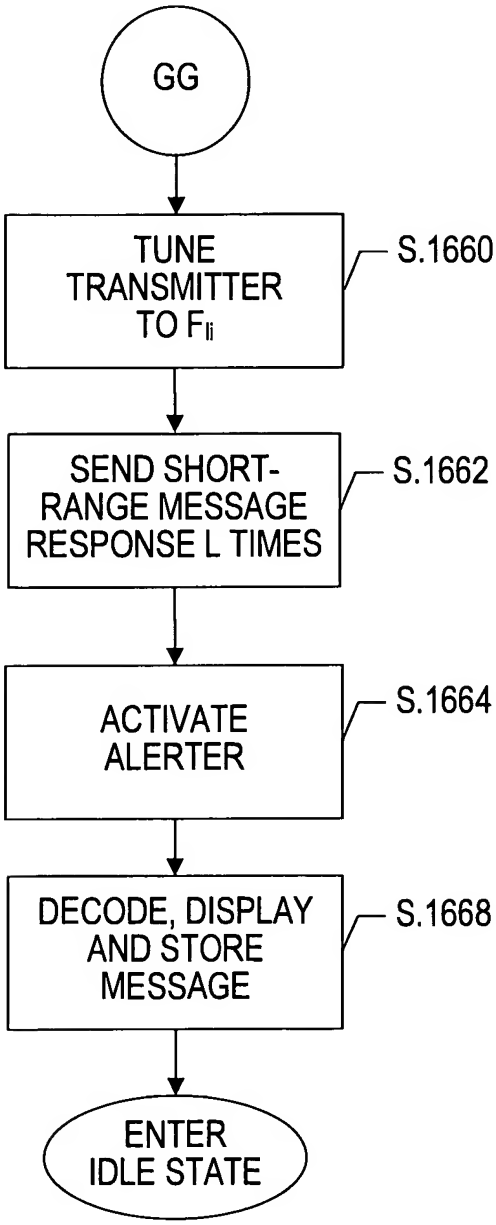

GG
TUNE TRANSMITTER TO $F_{li}$
S.1660
SEND SHORT-RANGE MESSAGE RESPONSE L TIMES
S.1662
ACTIVATE ALERTER
S.1664
DECODE, DISPLAY AND STORE MESSAGE
S.1668
ENTER IDLE STATE

FIG. 6E

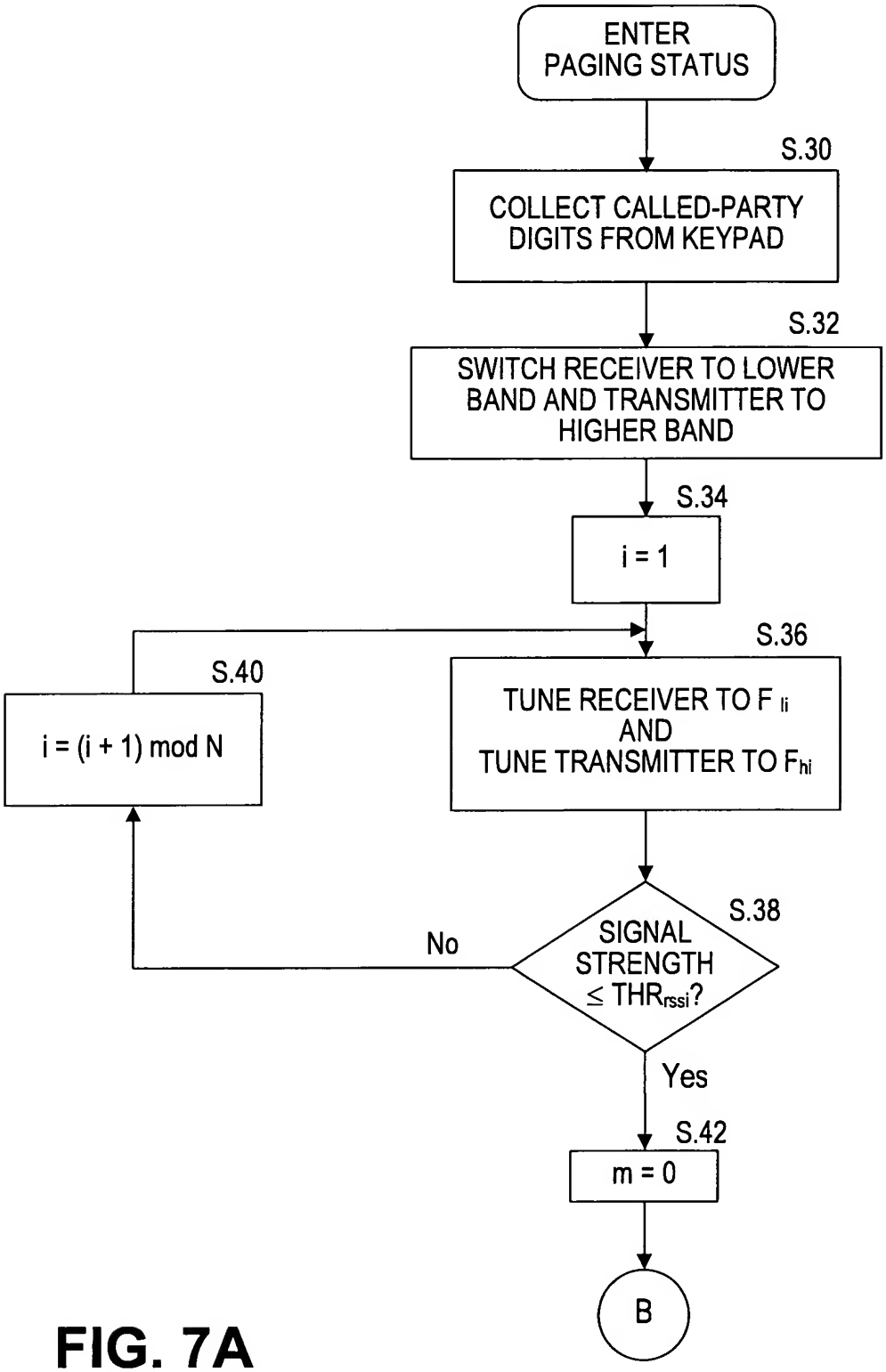

ENTER PAGING STATUS
S.30
COLLECT CALLED-PARTY DIGITS FROM KEYPAD
S.32
SWITCH RECEIVER TO LOWER BAND AND TRANSMITTER TO HIGHER BAND
S.34
i = 1
S.36
TUNE RECEIVER TO F li AND TUNE TRANSMITTER TO Fhi
S.38
SIGNAL STRENGTH ≤ THRrssi?
No
Yes
S.40
i = (i + 1) mod N
S.42
m = 0
B

FIG. 7A

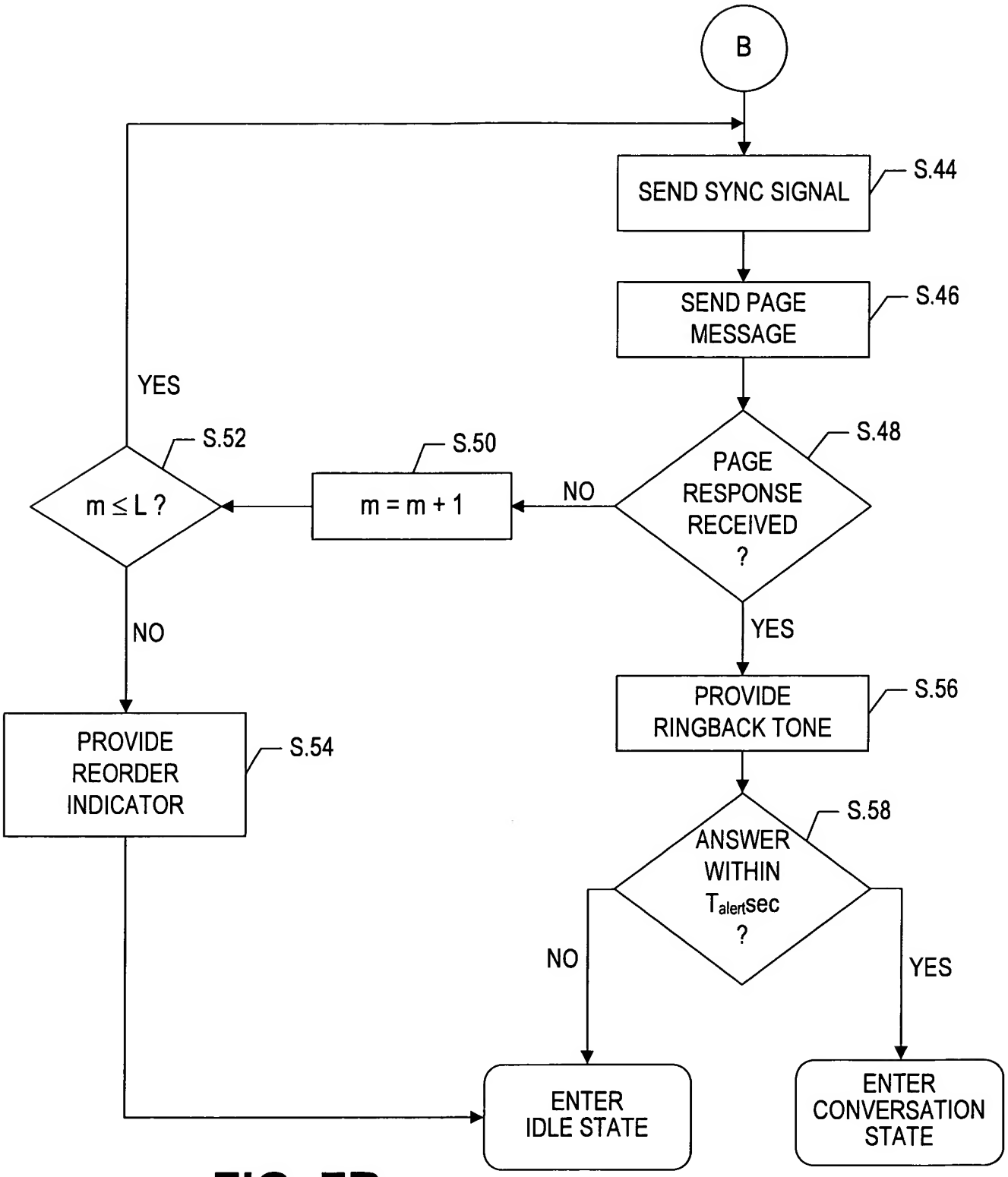

B
SEND SYNC SIGNAL
S.44
SEND PAGE MESSAGE
S.46
PAGE RESPONSE RECEIVED ?
S.48
NO
m = m + 1
S.50
m ≤ L ?
S.52
YES
NO
PROVIDE REORDER INDICATOR
S.54
YES
PROVIDE RINGBACK TONE
S.56
ANSWER WITHIN $T_{alert}$sec ?
S.58
NO
YES
ENTER IDLE STATE
ENTER CONVERSATION STATE

FIG. 7B

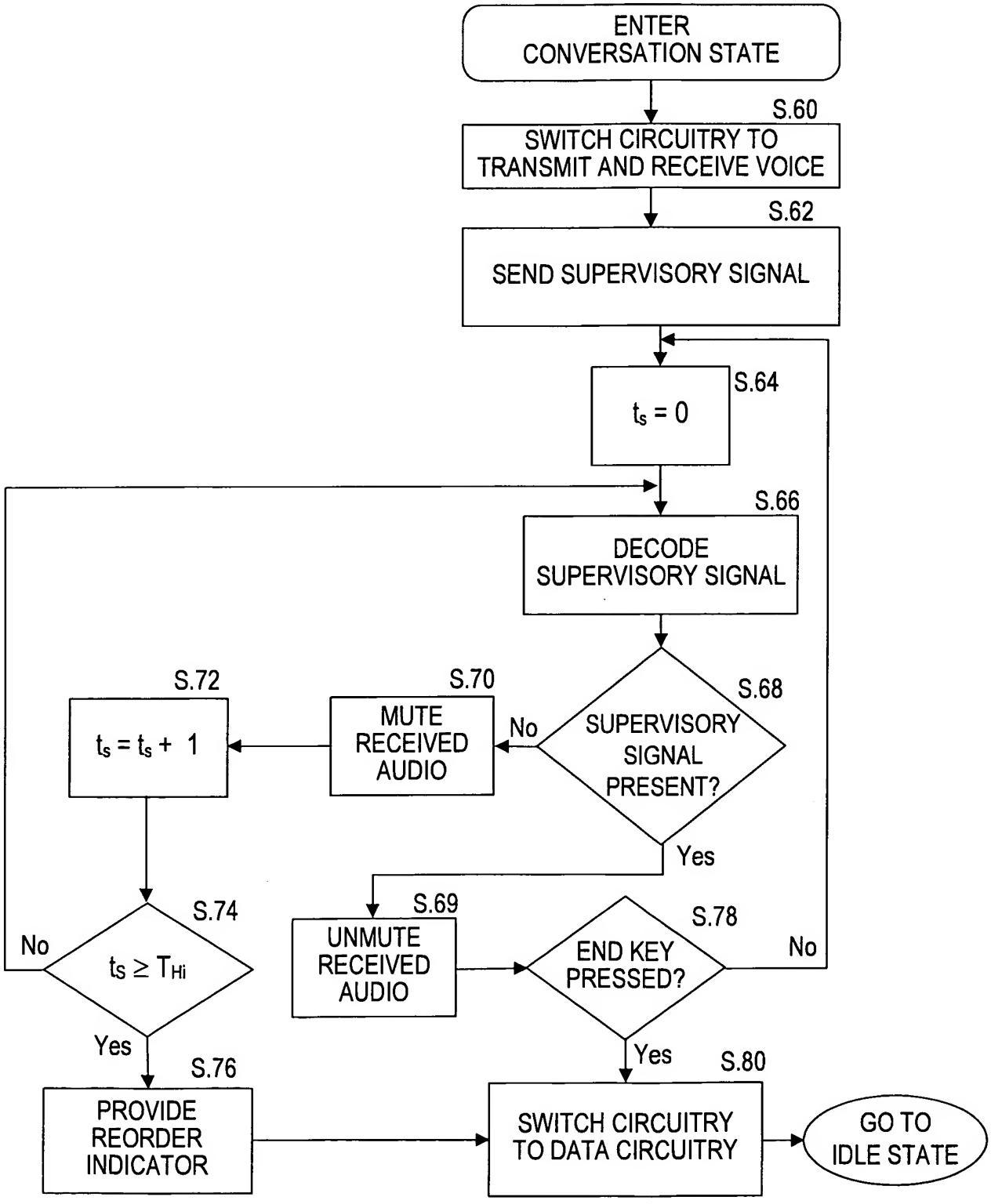

ENTER CONVERSATION STATE
S.60
SWITCH CIRCUITRY TO TRANSMIT AND RECEIVE VOICE
S.62
SEND SUPERVISORY SIGNAL
S.64
$t_s = 0$
S.66
DECODE SUPERVISORY SIGNAL
S.68
SUPERVISORY SIGNAL PRESENT?
No
S.70
MUTE RECEIVED AUDIO
S.72
$t_s = t_s + 1$
Yes
S.69
UNMUTE RECEIVED AUDIO
S.78
END KEY PRESSED?
No
Yes
S.80
SWITCH CIRCUITRY TO DATA CIRCUITRY
GO TO IDLE STATE
S.74
$t_S \geq T_{Hi}$
No
Yes
S.76
PROVIDE REORDER INDICATOR

FIG. 8

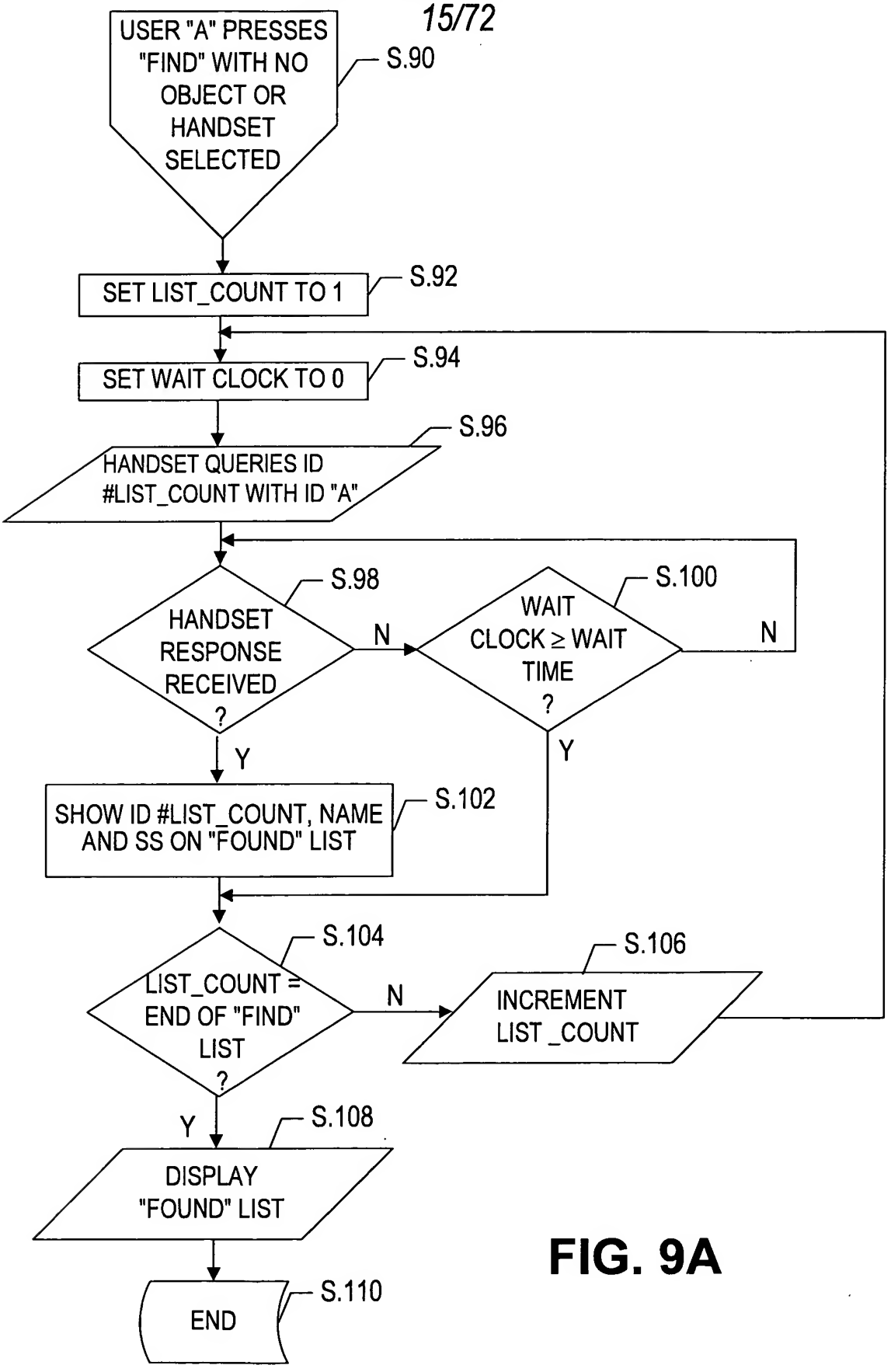

USER "A" PRESSES "FIND" WITH NO OBJECT OR HANDSET SELECTED
S.90
SET LIST_COUNT TO 1
S.92
SET WAIT CLOCK TO 0
S.94
HANDSET QUERIES ID #LIST_COUNT WITH ID "A"
S.96
HANDSET RESPONSE RECEIVED ?
S.98
N
WAIT CLOCK ≥ WAIT TIME ?
S.100
N
Y
Y
SHOW ID #LIST_COUNT, NAME AND SS ON "FOUND" LIST
S.102
LIST_COUNT = END OF "FIND" LIST ?
S.104
N
INCREMENT LIST _COUNT
S.106
Y
DISPLAY "FOUND" LIST
S.108
END
S.110

FIG. 9A

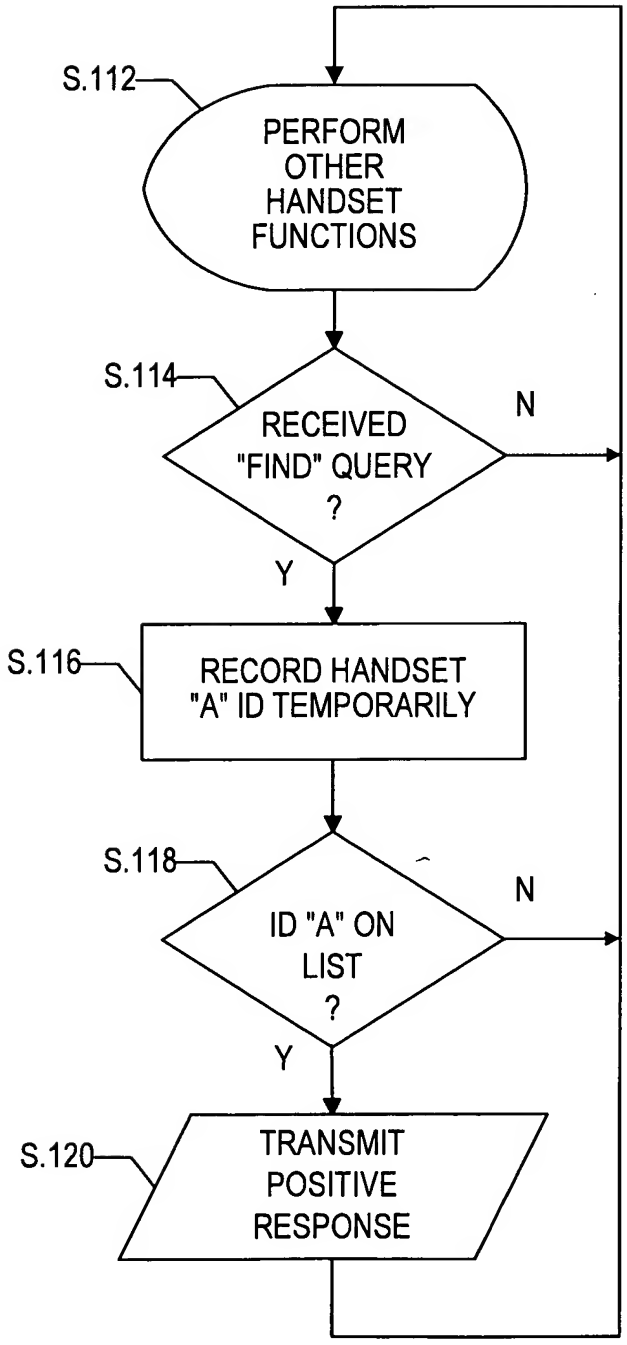

S.112
PERFORM OTHER HANDSET FUNCTIONS
S.114
RECEIVED "FIND" QUERY ?
N
Y
S.116
RECORD HANDSET "A" ID TEMPORARILY
S.118
ID "A" ON LIST ?
N
Y
S.120
TRANSMIT POSITIVE RESPONSE

FIG. 9B

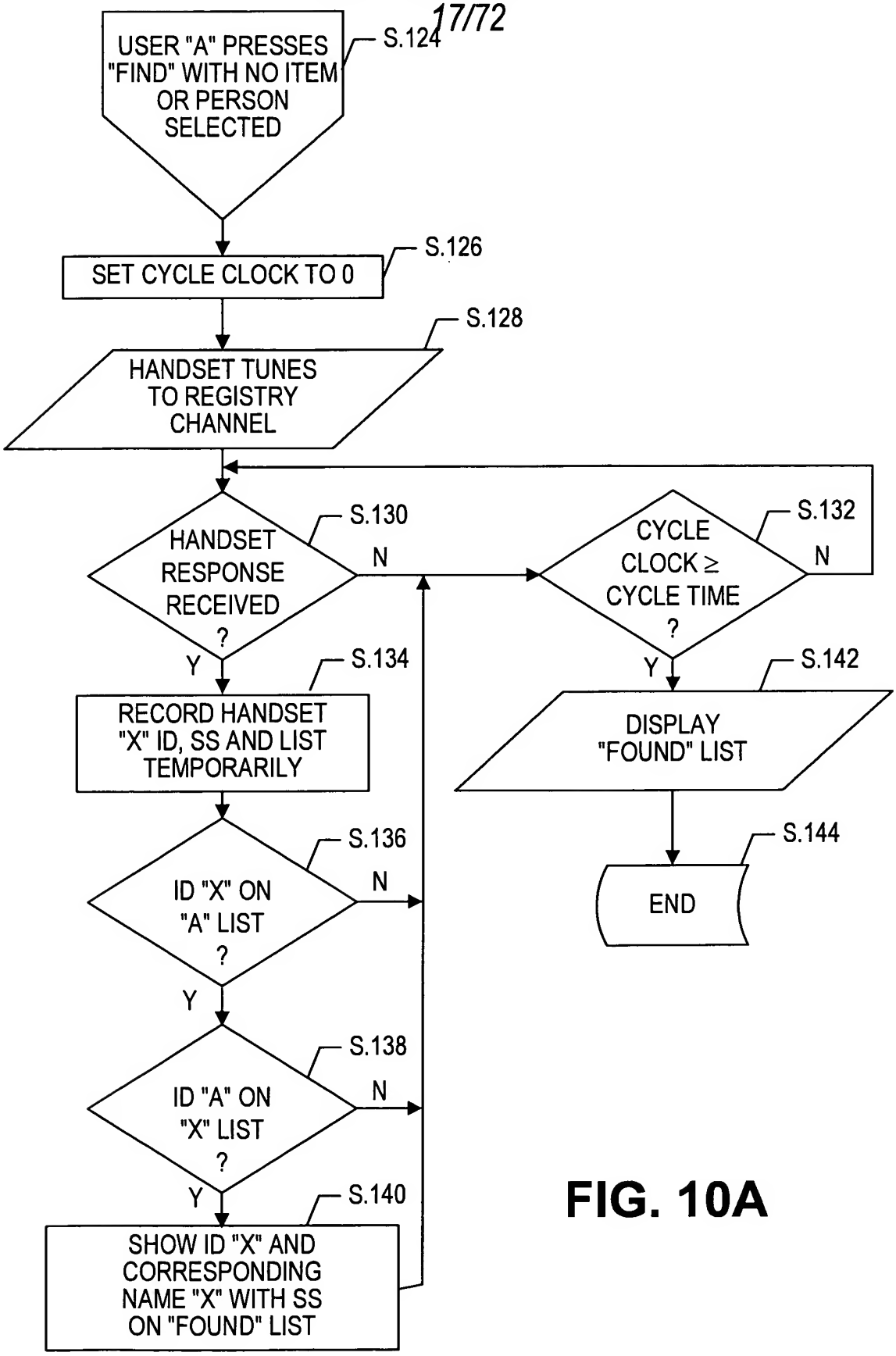

USER "A" PRESSES "FIND" WITH NO ITEM OR PERSON SELECTED
S.124
SET CYCLE CLOCK TO 0
S.126
HANDSET TUNES TO REGISTRY CHANNEL
S.128
HANDSET RESPONSE RECEIVED ?
S.130
N
Y
CYCLE CLOCK ≥ CYCLE TIME ?
S.132
N
Y
RECORD HANDSET "X" ID, SS AND LIST TEMPORARILY
S.134
DISPLAY "FOUND" LIST
S.142
ID "X" ON "A" LIST ?
S.136
N
Y
END
S.144
ID "A" ON "X" LIST ?
S.138
N
Y
SHOW ID "X" AND CORRESPONDING NAME "X" WITH SS ON "FOUND" LIST
S.140

FIG. 10A

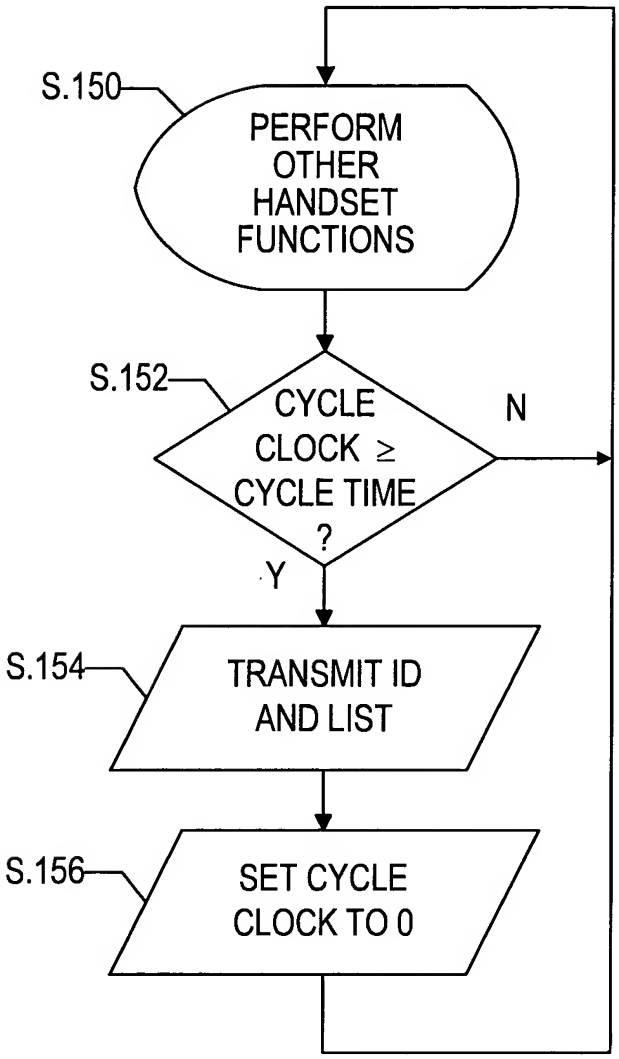

S.150
PERFORM OTHER HANDSET FUNCTIONS
S.152
CYCLE CLOCK ≥ CYCLE TIME ?
N
Y
S.154
TRANSMIT ID AND LIST
S.156
SET CYCLE CLOCK TO 0

FIG. 10B

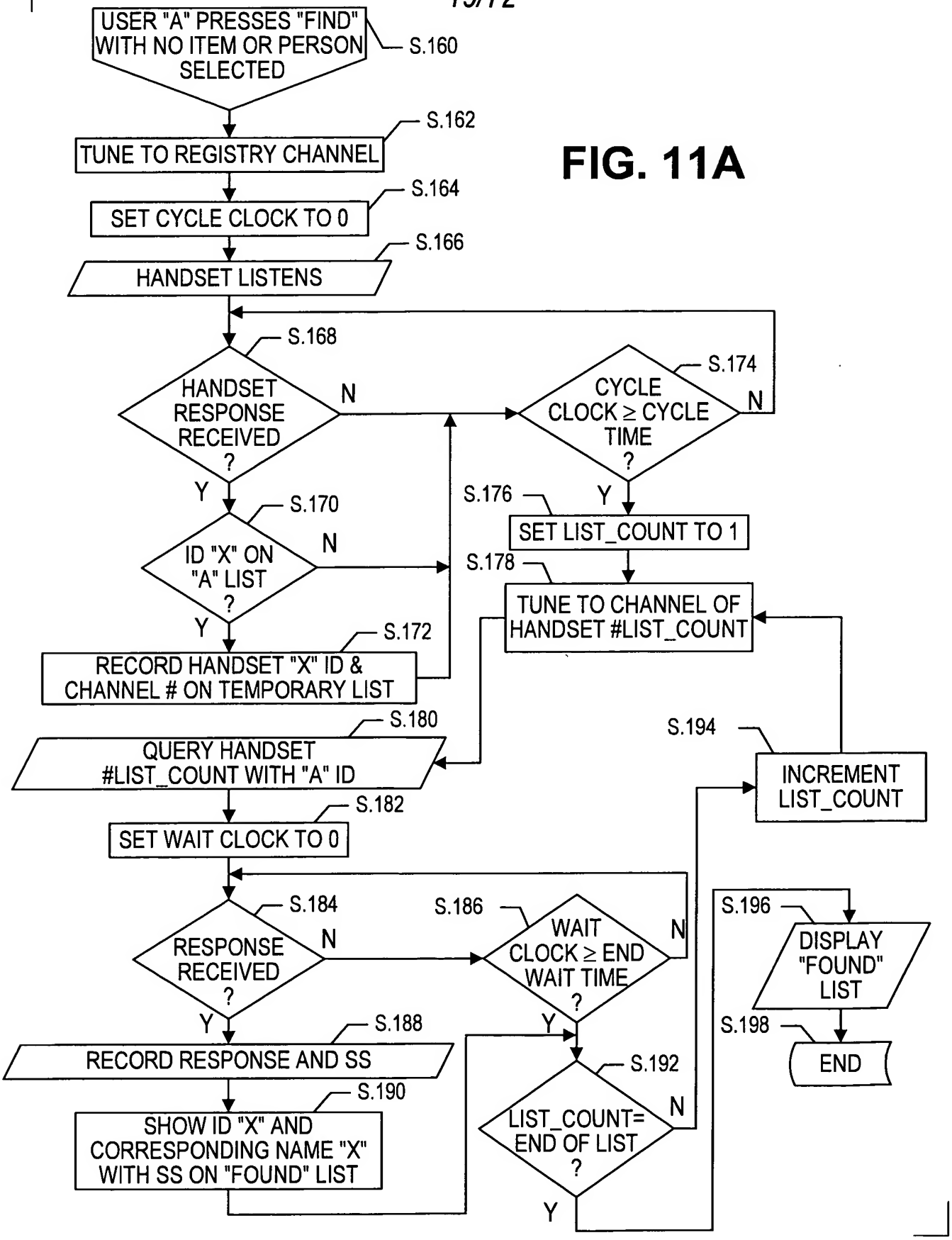

USER "A" PRESSES "FIND" WITH NO ITEM OR PERSON SELECTED
S.160
TUNE TO REGISTRY CHANNEL
S.162
SET CYCLE CLOCK TO 0
S.164
HANDSET LISTENS
S.166
HANDSET RESPONSE RECEIVED ?
S.168
N
Y
CYCLE CLOCK ≥ CYCLE TIME ?
S.174
N
Y
ID "X" ON "A" LIST ?
S.170
N
Y
RECORD HANDSET "X" ID & CHANNEL # ON TEMPORARY LIST
S.172
SET LIST_COUNT TO 1
S.176
TUNE TO CHANNEL OF HANDSET #LIST_COUNT
S.178
QUERY HANDSET #LIST_COUNT WITH "A" ID
S.180
SET WAIT CLOCK TO 0
S.182
INCREMENT LIST_COUNT
S.194
RESPONSE RECEIVED ?
S.184
N
Y
WAIT CLOCK ≥ END WAIT TIME ?
S.186
N
Y
RECORD RESPONSE AND SS
S.188
SHOW ID "X" AND CORRESPONDING NAME "X" WITH SS ON "FOUND" LIST
S.190
LIST_COUNT= END OF LIST ?
S.192
N
Y
DISPLAY "FOUND" LIST
S.196
END
S.198

FIG. 11A

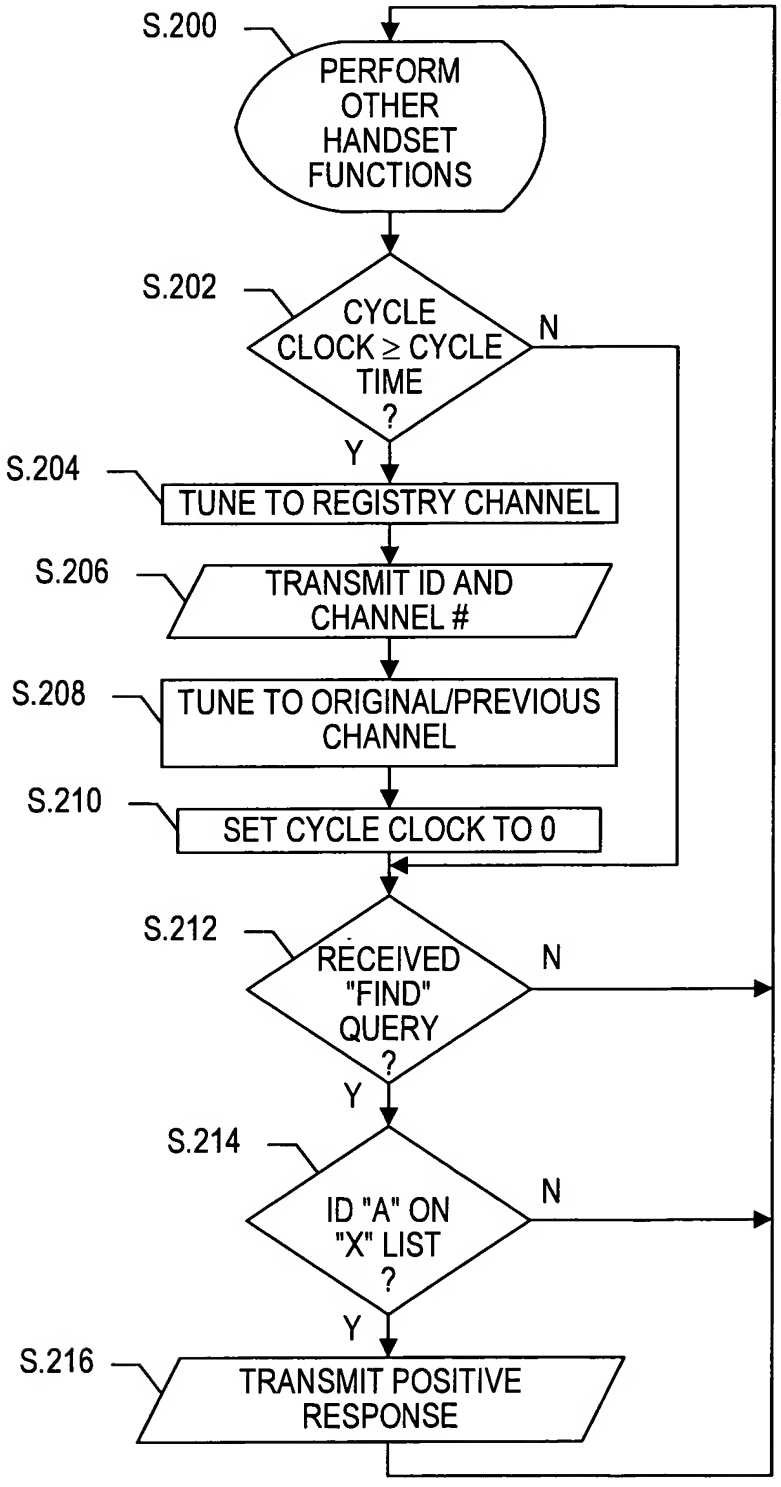

S.200
PERFORM OTHER HANDSET FUNCTIONS
S.202
CYCLE CLOCK ≥ CYCLE TIME ?
N
Y
S.204
TUNE TO REGISTRY CHANNEL
S.206
TRANSMIT ID AND CHANNEL #
S.208
TUNE TO ORIGINAL/PREVIOUS CHANNEL
S.210
SET CYCLE CLOCK TO 0
S.212
RECEIVED "FIND" QUERY ?
N
Y
S.214
ID "A" ON "X" LIST ?
N
Y
S.216
TRANSMIT POSITIVE RESPONSE

FIG. 11B

FIG. 11C

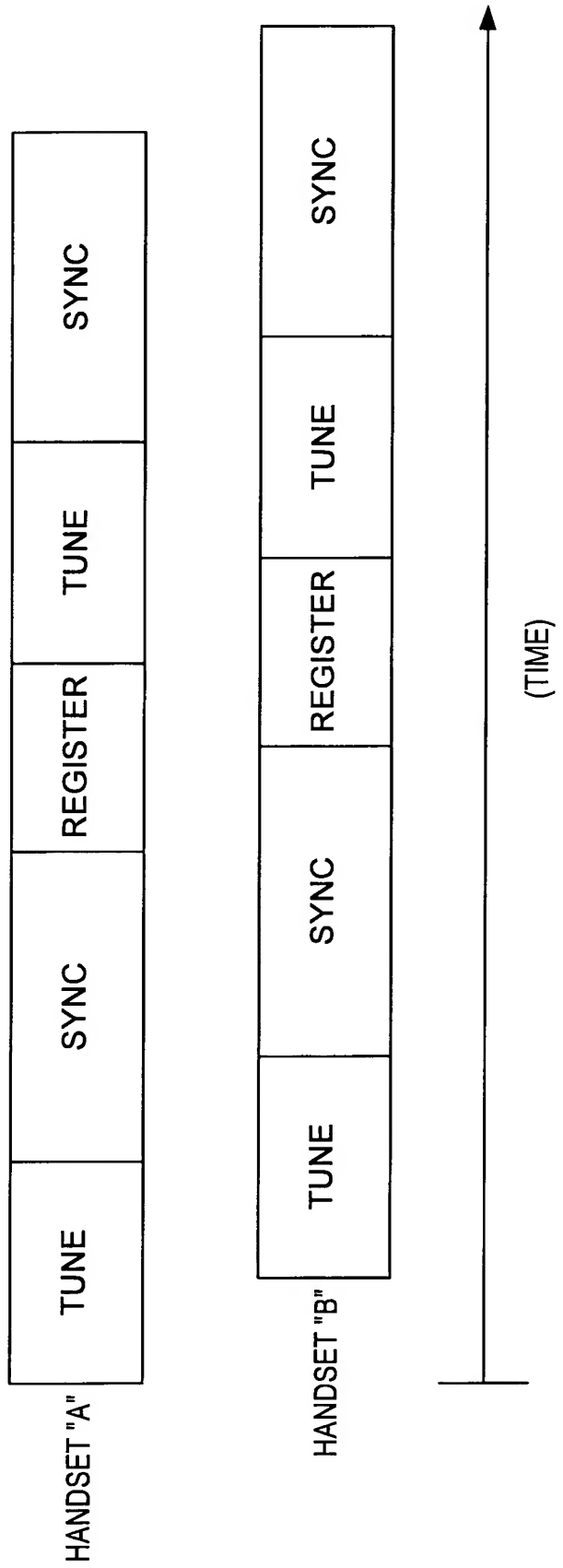

HANDSET "A"
TUNE
SYNC
REGISTER
TUNE
SYNC
HANDSET "B"
TUNE
SYNC
REGISTER
TUNE
SYNC
(TIME)

FIG. 12A

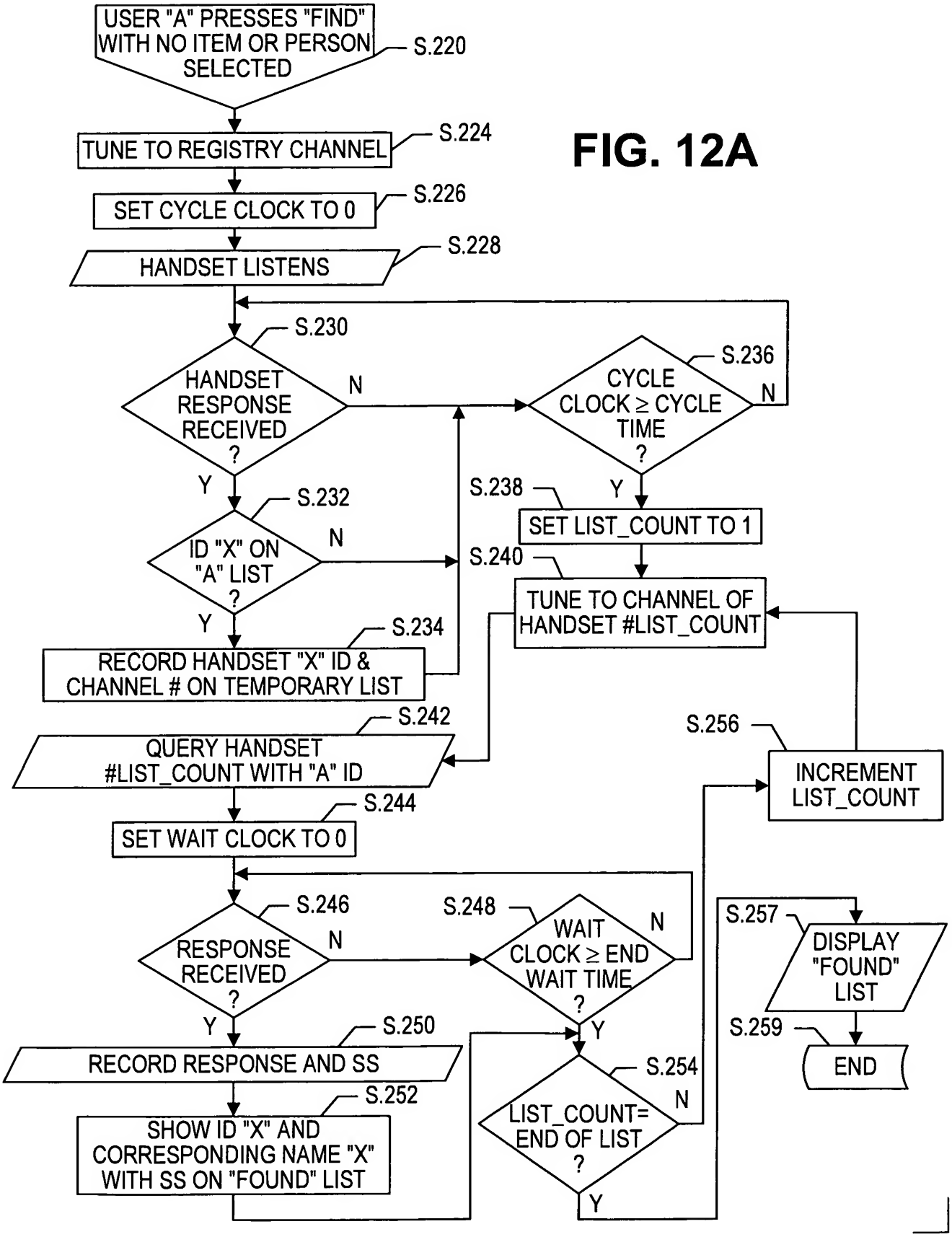
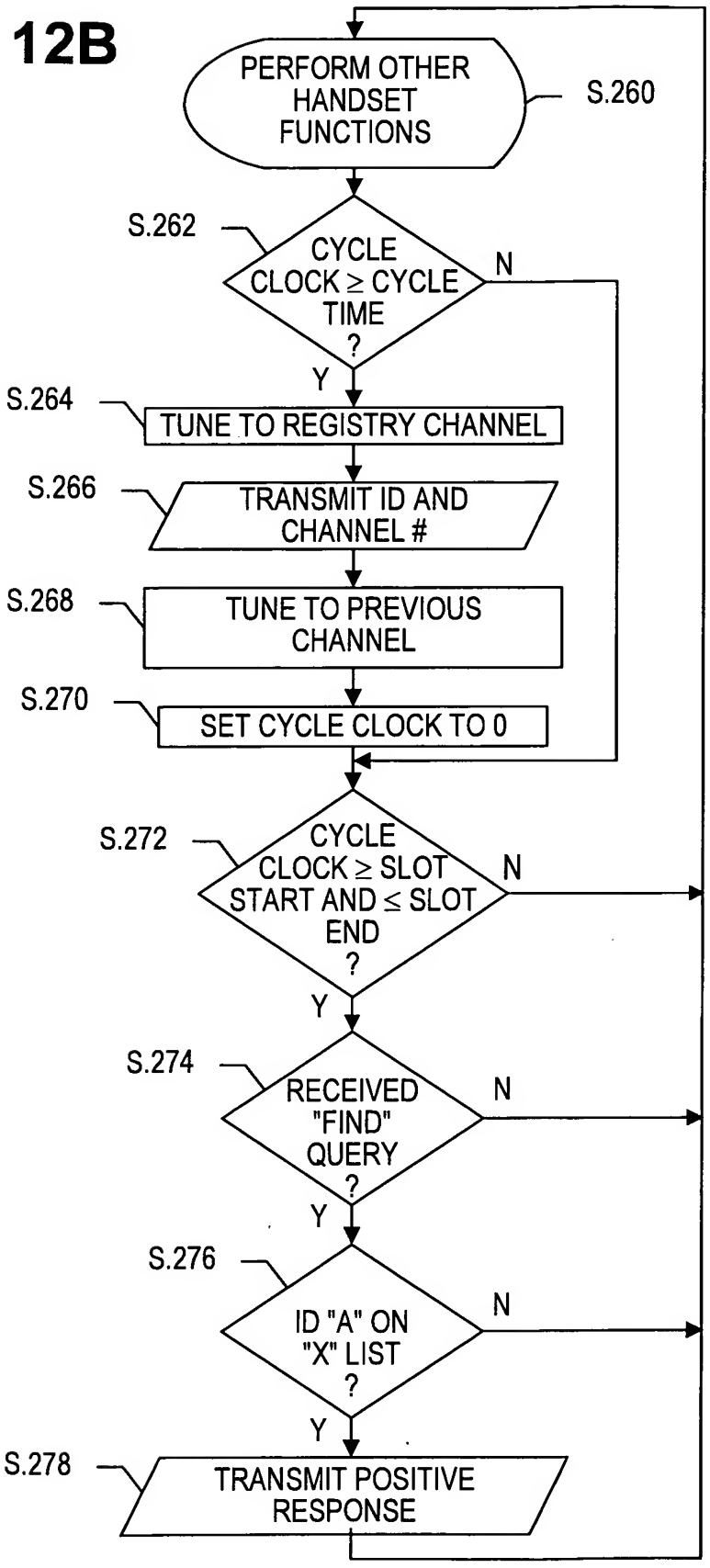

USER "A" PRESSES "FIND" WITH NO ITEM OR PERSON SELECTED
S.220
TUNE TO REGISTRY CHANNEL
S.224
SET CYCLE CLOCK TO 0
S.226
HANDSET LISTENS
S.228
S.230
HANDSET RESPONSE RECEIVED ?
N
Y
S.236
CYCLE CLOCK ≥ CYCLE TIME ?
N
Y
S.232
ID "X" ON "A" LIST ?
N
Y
S.238
SET LIST_COUNT TO 1
S.240
TUNE TO CHANNEL OF HANDSET #LIST_COUNT
S.234
RECORD HANDSET "X" ID & CHANNEL # ON TEMPORARY LIST
S.242
QUERY HANDSET #LIST_COUNT WITH "A" ID
S.256
INCREMENT LIST_COUNT
S.244
SET WAIT CLOCK TO 0
S.246
RESPONSE RECEIVED ?
N
Y
S.248
WAIT CLOCK ≥ END WAIT TIME ?
N
Y
S.257
DISPLAY "FOUND" LIST
S.259
END
S.250
RECORD RESPONSE AND SS
S.252
SHOW ID "X" AND CORRESPONDING NAME "X" WITH SS ON "FOUND" LIST
S.254
LIST_COUNT= END OF LIST ?
N
Y

FIG. 12B


PERFORM OTHER HANDSET FUNCTIONS
S.260
S.262
CYCLE CLOCK ≥ CYCLE TIME ?
N
Y
S.264
TUNE TO REGISTRY CHANNEL
S.266
TRANSMIT ID AND CHANNEL #
S.268
TUNE TO PREVIOUS CHANNEL
S.270
SET CYCLE CLOCK TO 0
S.272
CYCLE CLOCK ≥ SLOT START AND ≤ SLOT END ?
N
Y
S.274
RECEIVED "FIND" QUERY ?
N
Y
S.276
ID "A" ON "X" LIST ?
N
Y
S.278
TRANSMIT POSITIVE RESPONSE

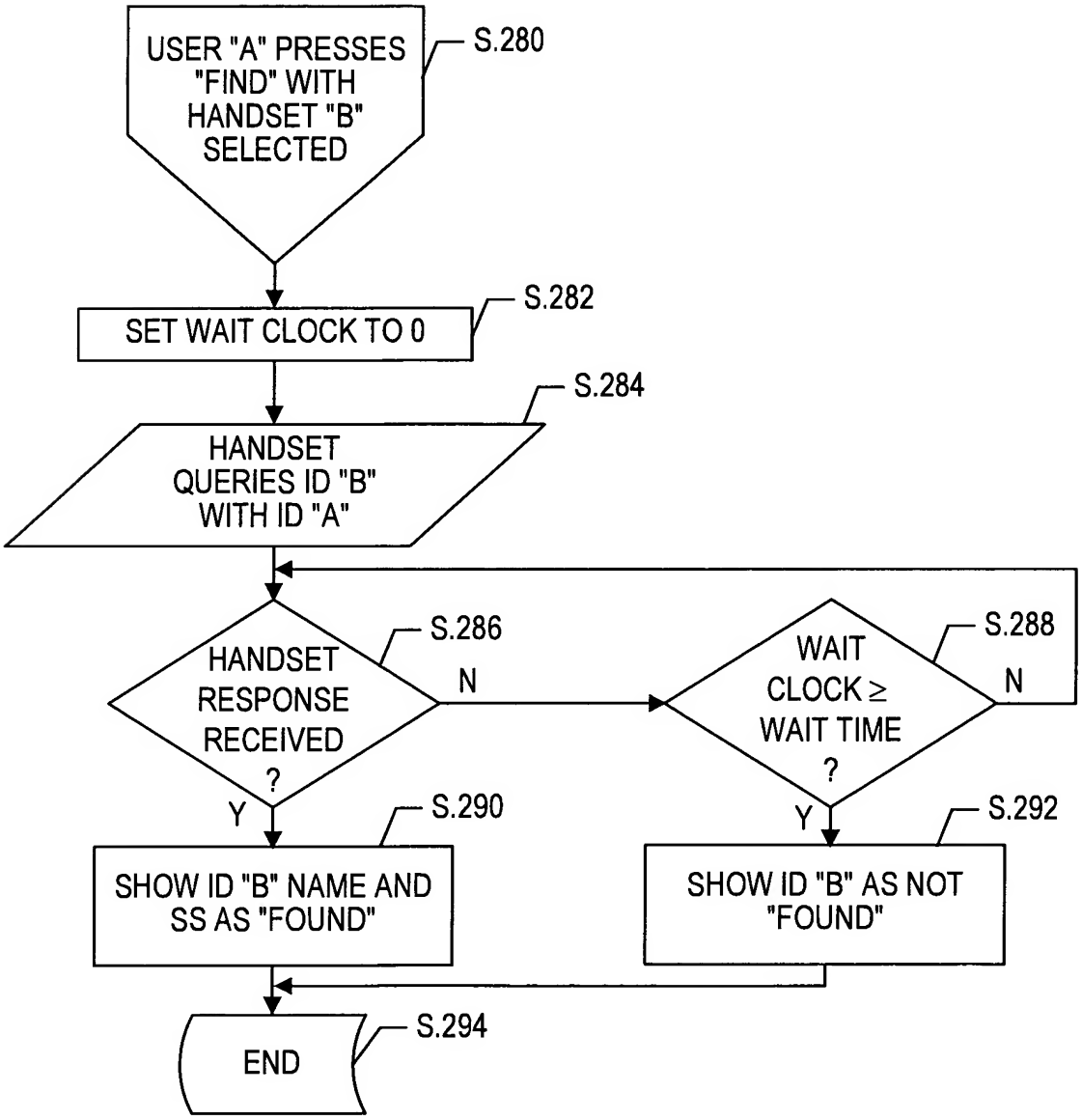

USER "A" PRESSES "FIND" WITH HANDSET "B" SELECTED
S.280
SET WAIT CLOCK TO 0
S.282
HANDSET QUERIES ID "B" WITH ID "A"
S.284
HANDSET RESPONSE RECEIVED ?
S.286
N
Y
WAIT CLOCK ≥ WAIT TIME ?
S.288
N
Y
SHOW ID "B" NAME AND SS AS "FOUND"
S.290
SHOW ID "B" AS NOT "FOUND"
S.292
END
S.294

FIG. 13A

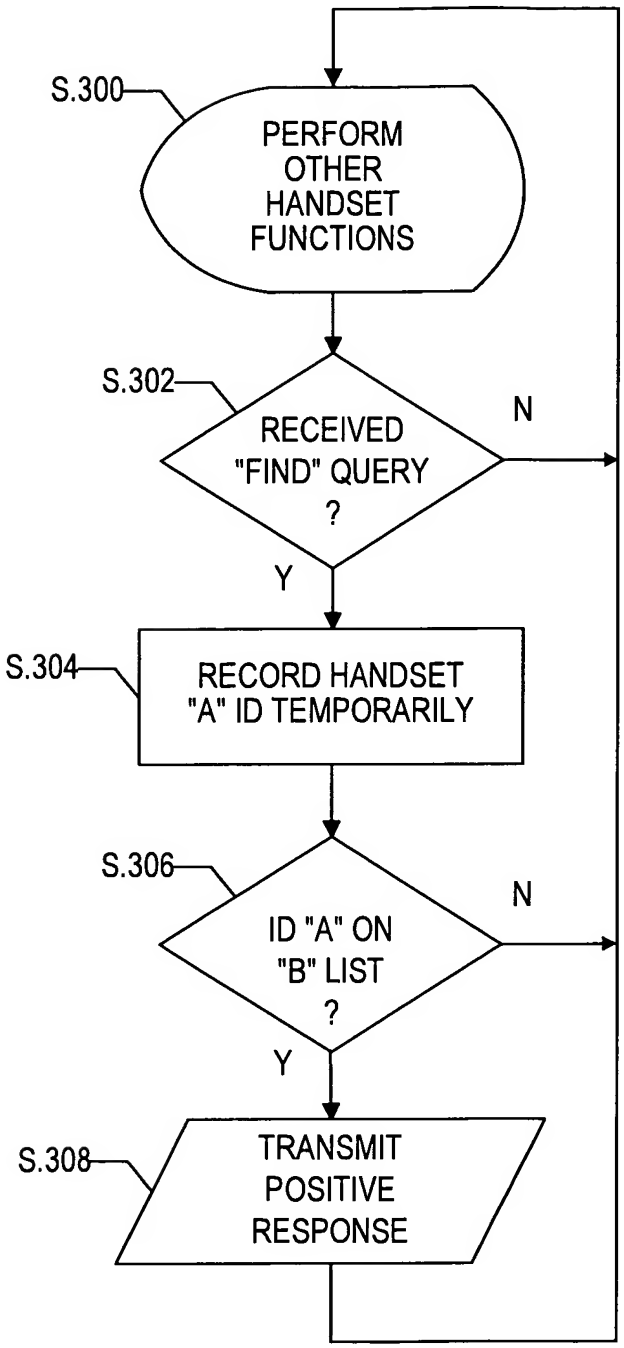

S.300
PERFORM OTHER HANDSET FUNCTIONS
S.302
RECEIVED "FIND" QUERY ?
N
Y
S.304
RECORD HANDSET "A" ID TEMPORARILY
S.306
ID "A" ON "B" LIST ?
N
Y
S.308
TRANSMIT POSITIVE RESPONSE

FIG. 13B

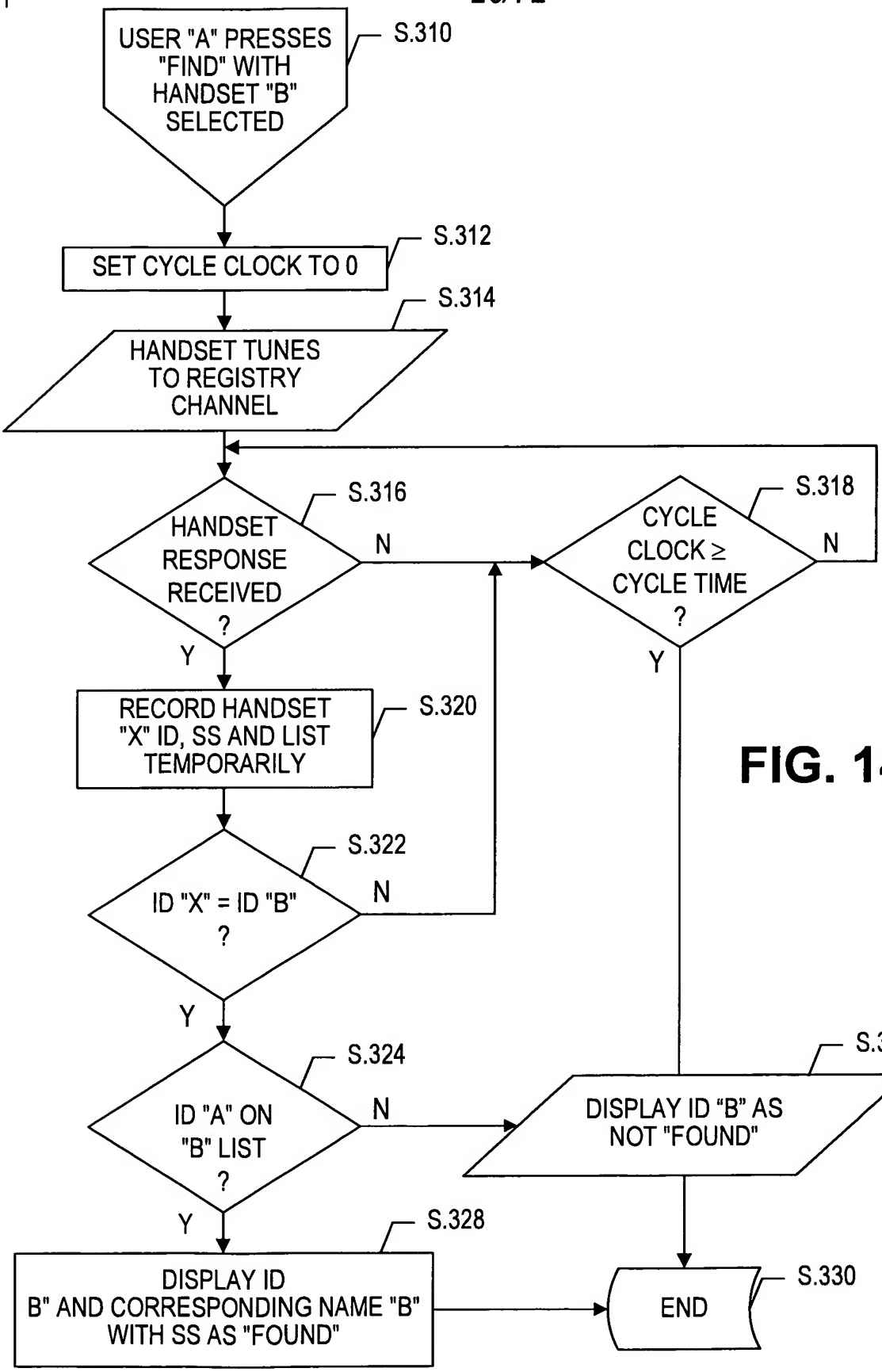

USER "A" PRESSES "FIND" WITH HANDSET "B" SELECTED
S.310
SET CYCLE CLOCK TO 0
S.312
HANDSET TUNES TO REGISTRY CHANNEL
S.314
HANDSET RESPONSE RECEIVED ?
S.316
N
Y
CYCLE CLOCK ≥ CYCLE TIME ?
S.318
N
Y
RECORD HANDSET "X" ID, SS AND LIST TEMPORARILY
S.320
ID "X" = ID "B" ?
S.322
N
Y
ID "A" ON "B" LIST ?
S.324
N
Y
DISPLAY ID "B" AS NOT "FOUND"
S.326
DISPLAY ID B" AND CORRESPONDING NAME "B" WITH SS AS "FOUND"
S.328
END
S.330

FIG. 14A

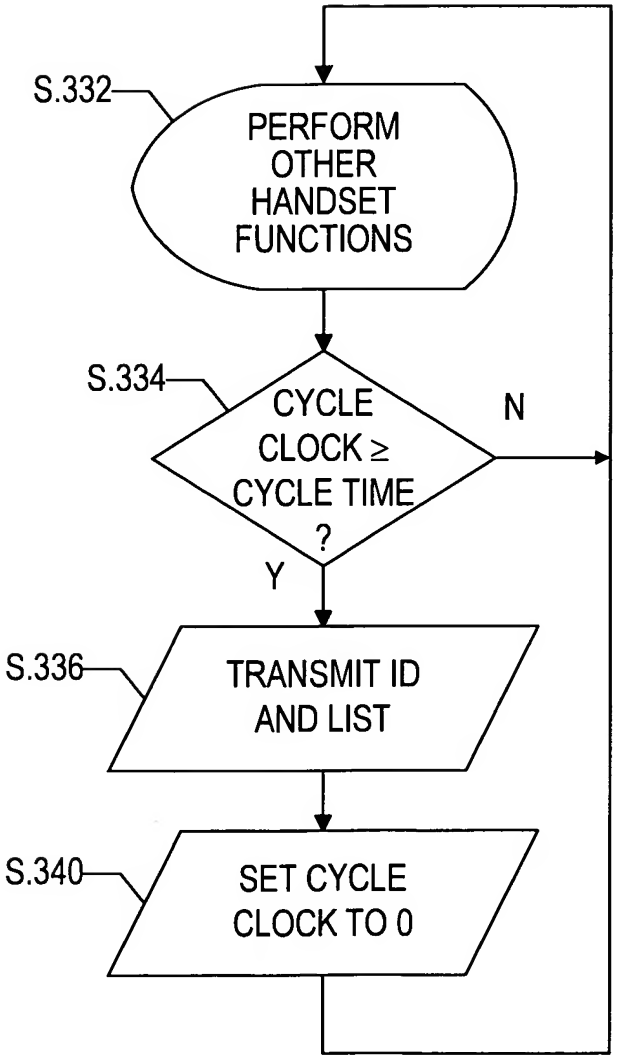

S.332
PERFORM OTHER HANDSET FUNCTIONS
S.334
CYCLE CLOCK ≥ CYCLE TIME ?
N
Y
S.336
TRANSMIT ID AND LIST
S.340
SET CYCLE CLOCK TO 0

FIG. 14B

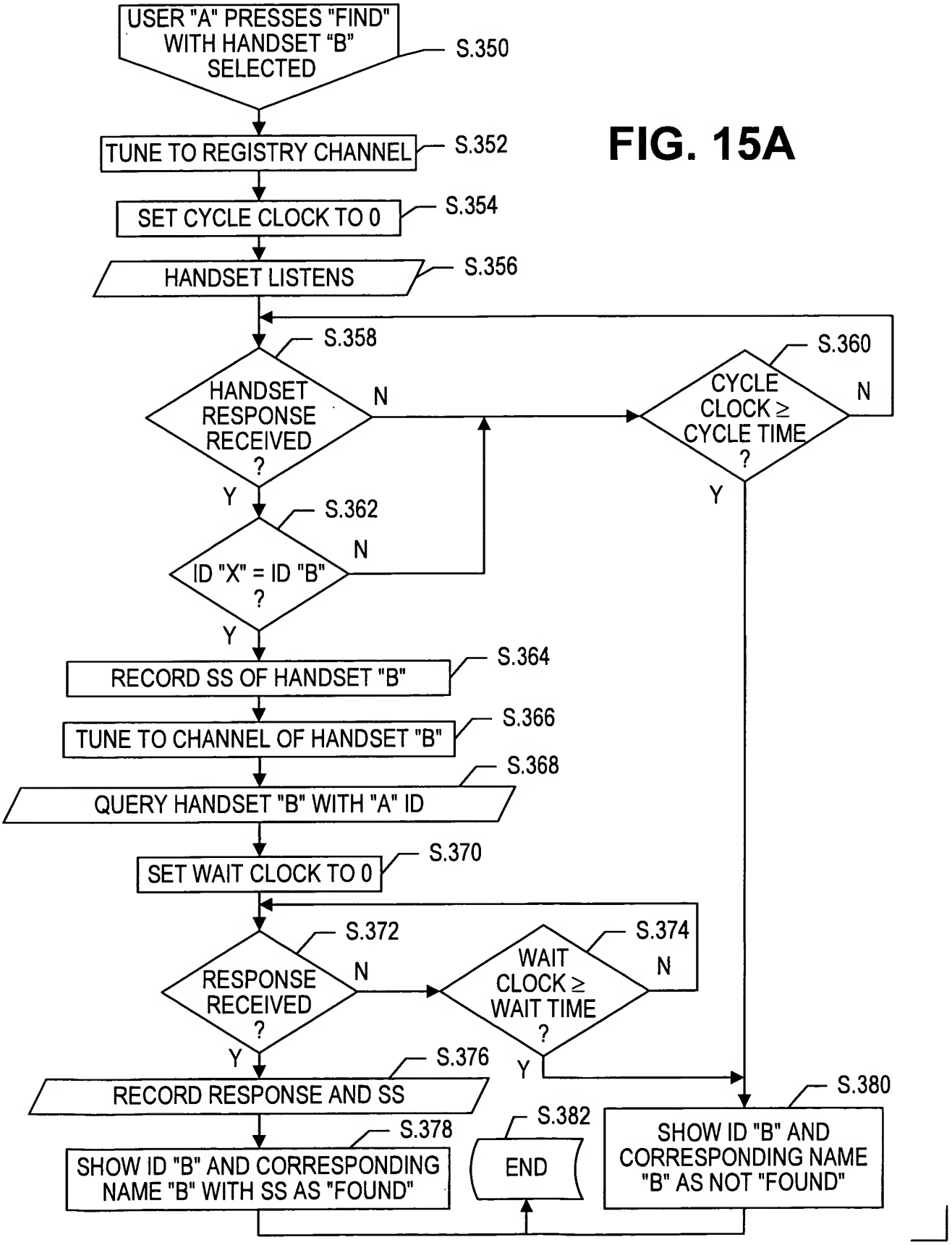

USER "A" PRESSES "FIND" WITH HANDSET "B" SELECTED
S.350
TUNE TO REGISTRY CHANNEL
S.352
SET CYCLE CLOCK TO 0
S.354
HANDSET LISTENS
S.356
S.358
HANDSET RESPONSE RECEIVED ?
N
Y
S.360
CYCLE CLOCK ≥ CYCLE TIME ?
N
Y
S.362
ID "X" = ID "B" ?
N
Y
RECORD SS OF HANDSET "B"
S.364
TUNE TO CHANNEL OF HANDSET "B"
S.366
QUERY HANDSET "B" WITH "A" ID
S.368
SET WAIT CLOCK TO 0
S.370
S.372
RESPONSE RECEIVED ?
N
Y
S.374
WAIT CLOCK ≥ WAIT TIME ?
N
Y
RECORD RESPONSE AND SS
S.376
SHOW ID "B" AND CORRESPONDING NAME "B" WITH SS AS "FOUND"
S.378
END
S.382
SHOW ID "B" AND CORRESPONDING NAME "B" AS NOT "FOUND"
S.380

FIG. 15A

FIG. 15B

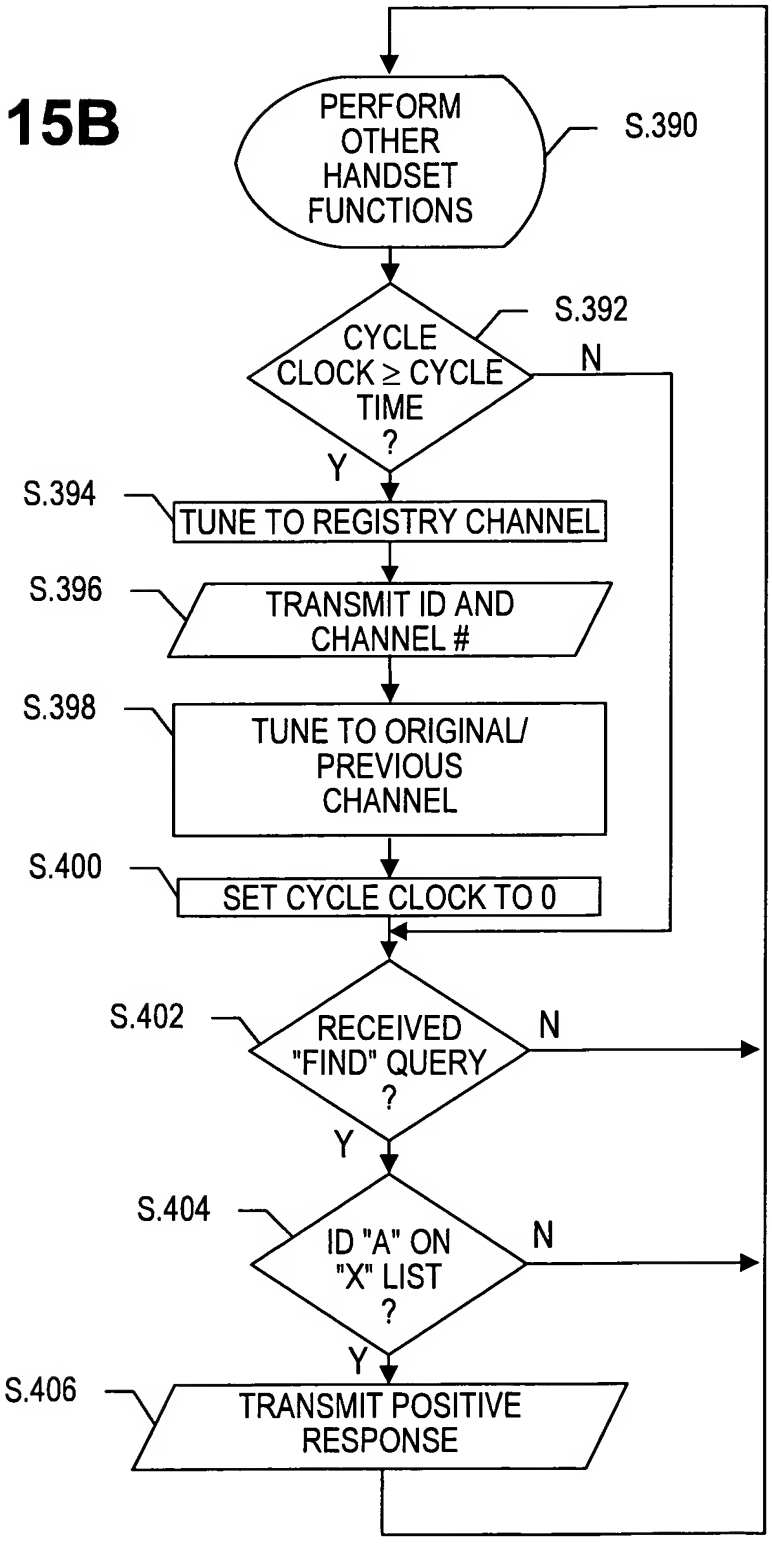

PERFORM OTHER HANDSET FUNCTIONS
S.390
CYCLE CLOCK ≥ CYCLE TIME ?
S.392
N
Y
S.394
TUNE TO REGISTRY CHANNEL
S.396
TRANSMIT ID AND CHANNEL #
S.398
TUNE TO ORIGINAL/ PREVIOUS CHANNEL
S.400
SET CYCLE CLOCK TO 0
S.402
RECEIVED "FIND" QUERY ?
N
Y
S.404
ID "A" ON "X" LIST ?
N
Y
S.406
TRANSMIT POSITIVE RESPONSE

FIG. 16A

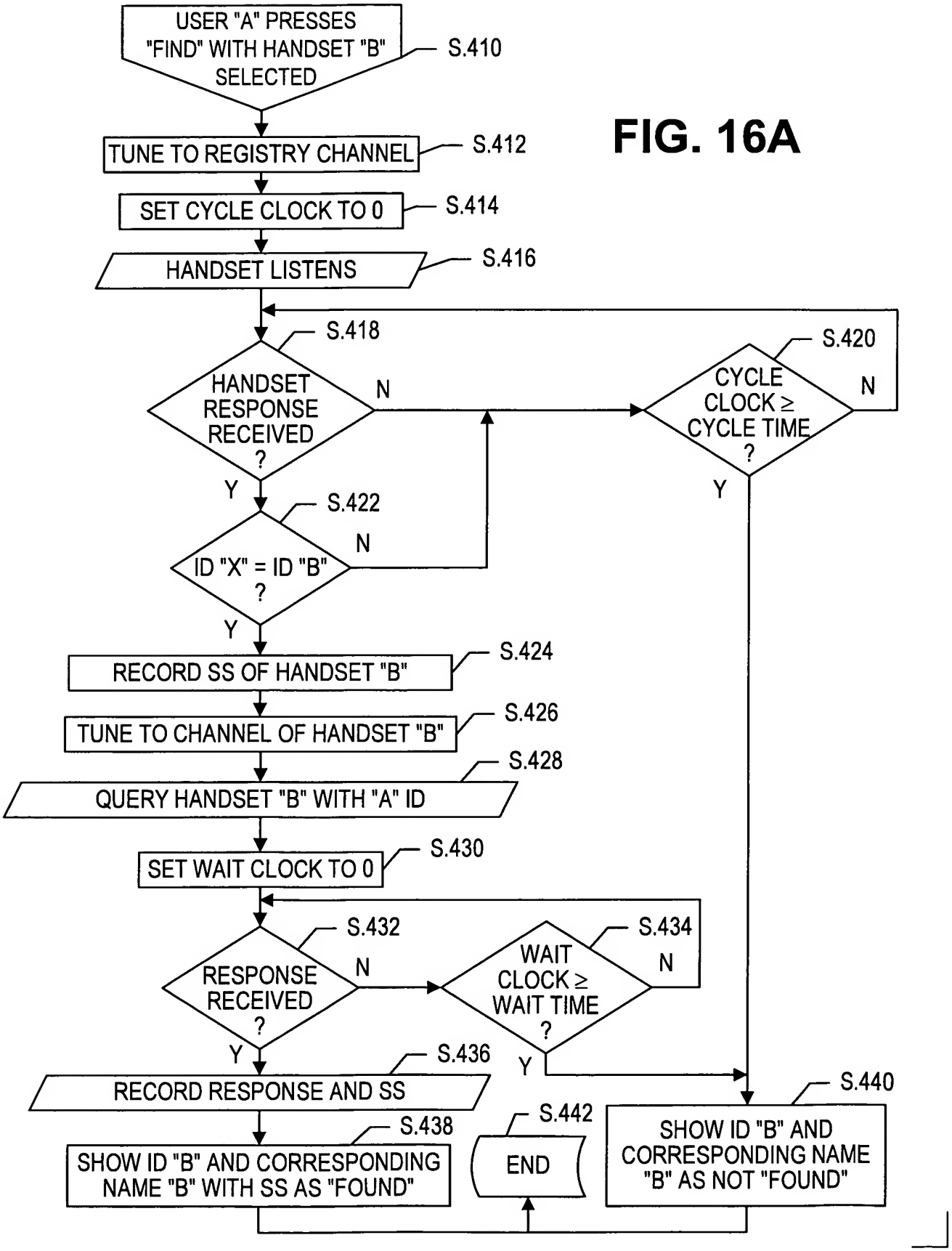
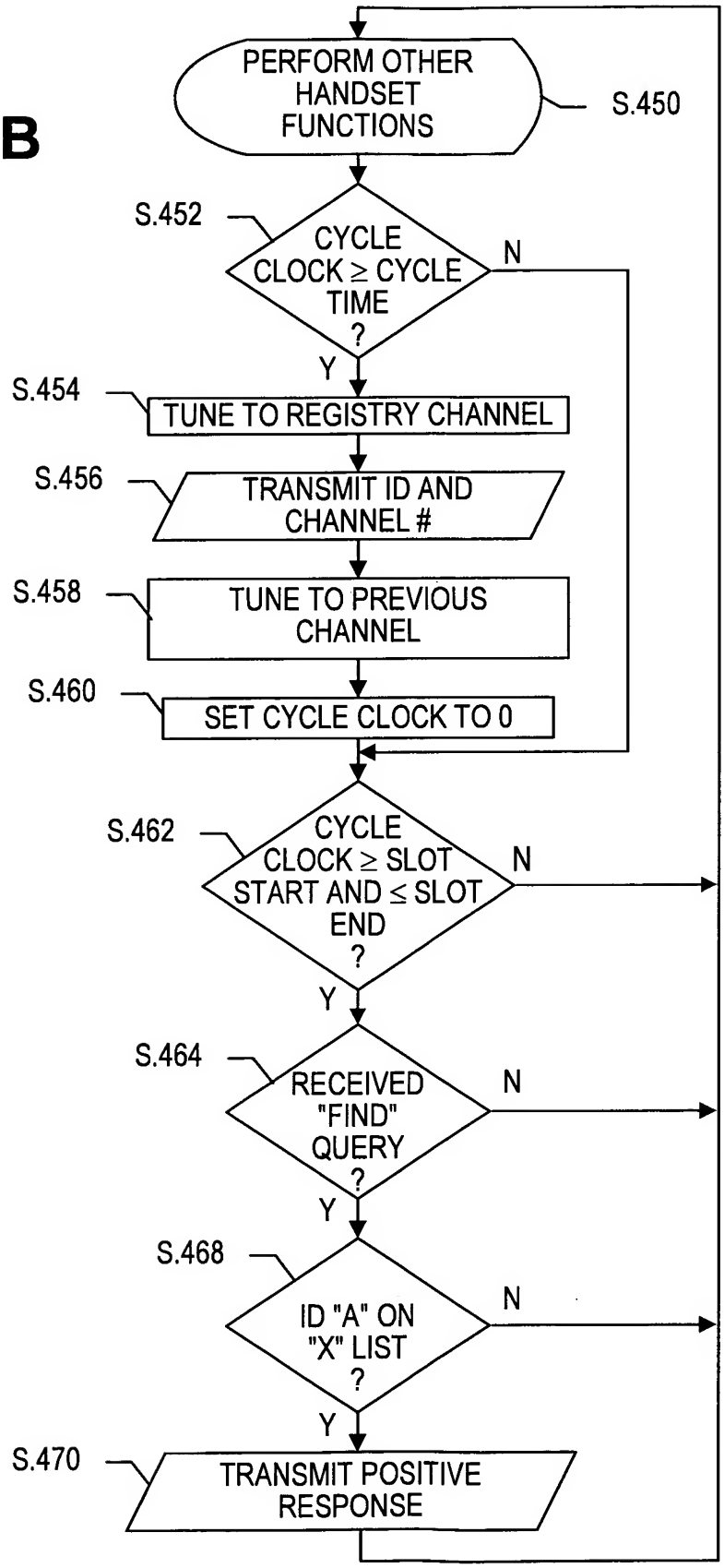

USER "A" PRESSES "FIND" WITH HANDSET "B" SELECTED
S.410
TUNE TO REGISTRY CHANNEL
S.412
SET CYCLE CLOCK TO 0
S.414
HANDSET LISTENS
S.416
S.418
HANDSET RESPONSE RECEIVED ?
N
Y
S.420
CYCLE CLOCK ≥ CYCLE TIME ?
N
Y
S.422
ID "X" = ID "B" ?
N
Y
RECORD SS OF HANDSET "B"
S.424
TUNE TO CHANNEL OF HANDSET "B"
S.426
QUERY HANDSET "B" WITH "A" ID
S.428
SET WAIT CLOCK TO 0
S.430
S.432
RESPONSE RECEIVED ?
N
Y
S.434
WAIT CLOCK ≥ WAIT TIME ?
N
Y
RECORD RESPONSE AND SS
S.436
SHOW ID "B" AND CORRESPONDING NAME "B" WITH SS AS "FOUND"
S.438
END
S.442
SHOW ID "B" AND CORRESPONDING NAME "B" AS NOT "FOUND"
S.440

FIG. 16B


PERFORM OTHER HANDSET FUNCTIONS
S.450
S.452
CYCLE CLOCK ≥ CYCLE TIME ?
N
Y
S.454
TUNE TO REGISTRY CHANNEL
S.456
TRANSMIT ID AND CHANNEL #
S.458
TUNE TO PREVIOUS CHANNEL
S.460
SET CYCLE CLOCK TO 0
S.462
CYCLE CLOCK ≥ SLOT START AND ≤ SLOT END ?
N
Y
S.464
RECEIVED "FIND" QUERY ?
N
Y
S.468
ID "A" ON "X" LIST ?
N
Y
S.470
TRANSMIT POSITIVE RESPONSE

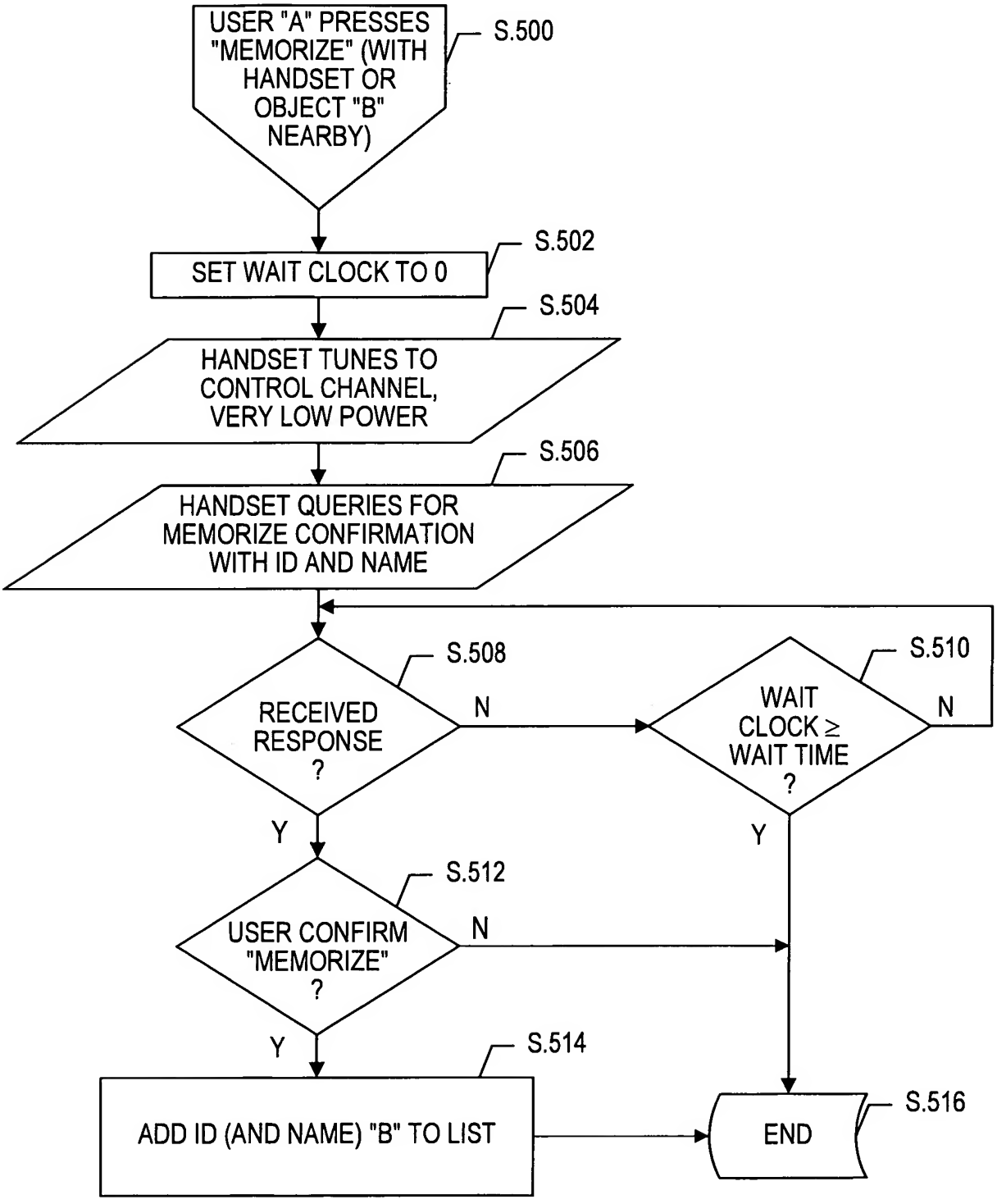

USER "A" PRESSES "MEMORIZE" (WITH HANDSET OR OBJECT "B" NEARBY)
S.500
SET WAIT CLOCK TO 0
S.502
HANDSET TUNES TO CONTROL CHANNEL, VERY LOW POWER
S.504
HANDSET QUERIES FOR MEMORIZE CONFIRMATION WITH ID AND NAME
S.506
RECEIVED RESPONSE ?
S.508
N
WAIT CLOCK ≥ WAIT TIME ?
S.510
N
Y
Y
USER CONFIRM "MEMORIZE" ?
S.512
N
Y
ADD ID (AND NAME) "B" TO LIST
S.514
END
S.516

FIG. 17A

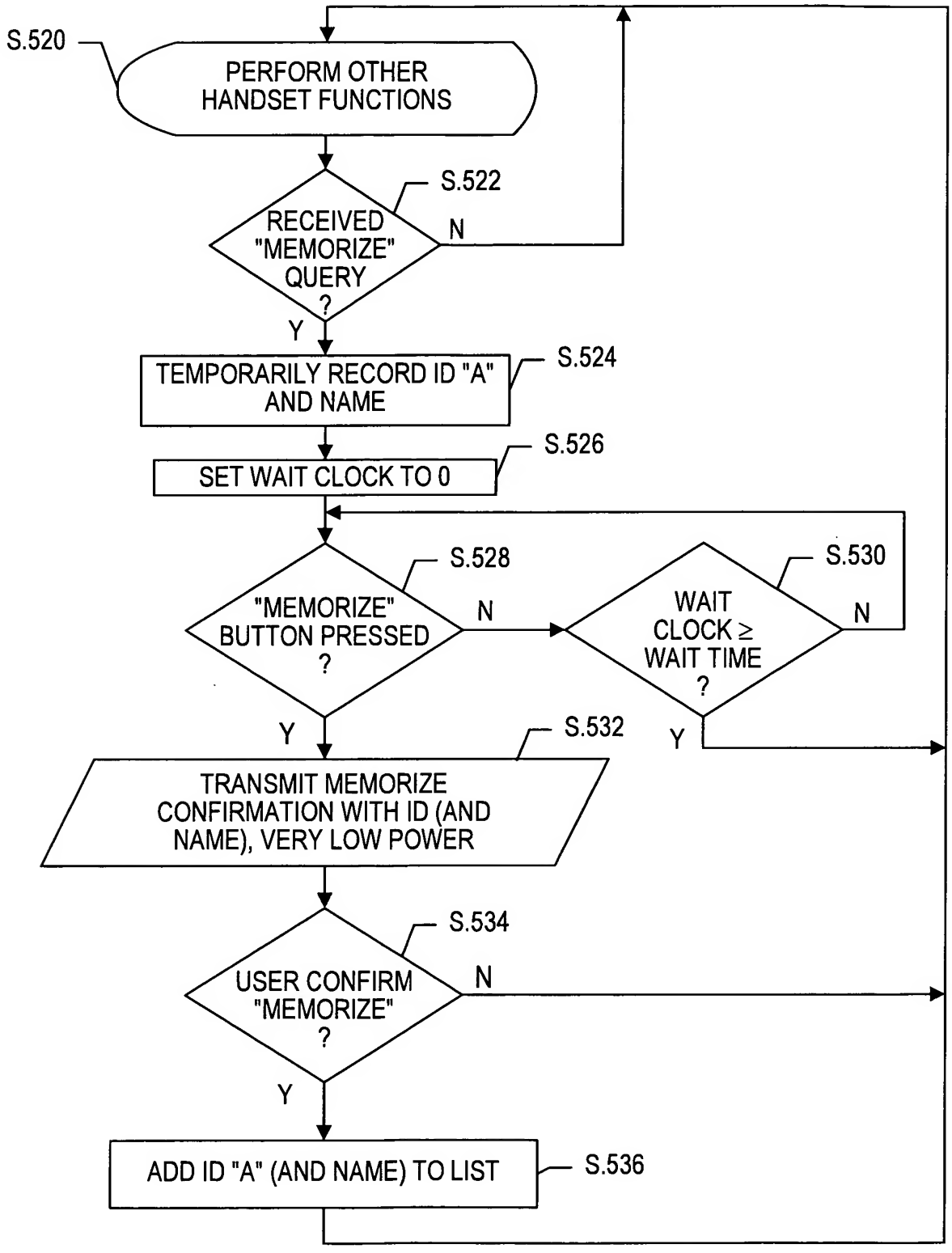

S.520
PERFORM OTHER HANDSET FUNCTIONS
S.522
RECEIVED "MEMORIZE" QUERY ?
N
Y
S.524
TEMPORARILY RECORD ID "A" AND NAME
S.526
SET WAIT CLOCK TO 0
S.528
"MEMORIZE" BUTTON PRESSED ?
N
S.530
WAIT CLOCK ≥ WAIT TIME ?
N
Y
Y
S.532
TRANSMIT MEMORIZE CONFIRMATION WITH ID (AND NAME), VERY LOW POWER
S.534
USER CONFIRM "MEMORIZE" ?
N
Y
ADD ID "A" (AND NAME) TO LIST
S.536

FIG. 17B

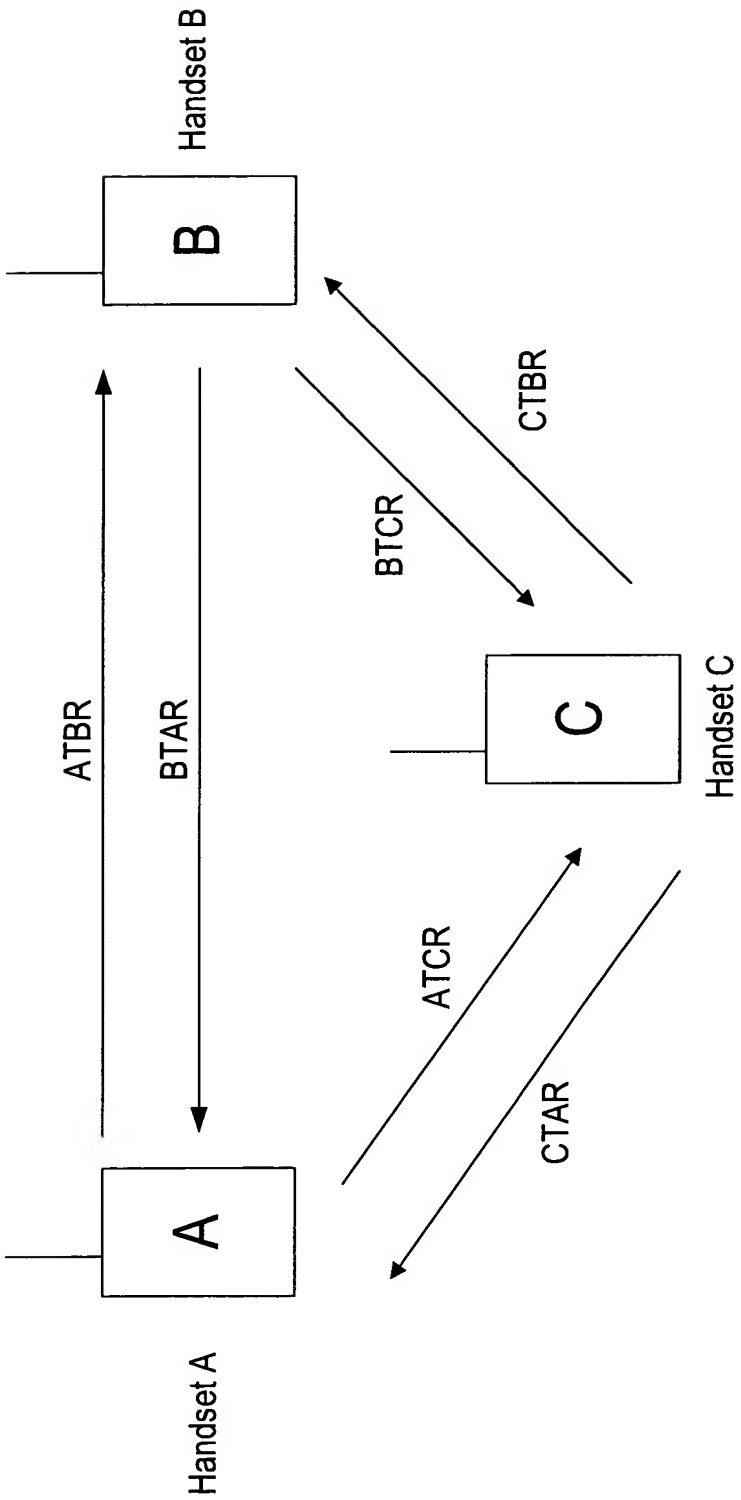

Handset B
B
CTBR
BTCR
ATBR
BTAR
C
Handset C
ATCR
CTAR
A
Handset A

FIG. 18A

| | TS1 | TS2 | TS3 |
|---|---|---|---|
| HANDSET A | | | |
| Transmit | C | ATBR | ATCR |
| Receive | C | CTAR | BTAR |
| HANDSET B | | | |
| Transmit | C | BTCR | BTAR |
| Receive | C | ATBR | CTBR |
| HANDSET C | | | |
| Transmit | C | CTAR | CTBR |
| Receive | C | BTCR | ATCR |

FIG. 18B

| | TS1 | TS2 | TS3 |
|---|---|---|---|
| HANDSET A Transmit | C | ATBR | ATCR |
| Receive | CTAR | BTAR | C |
| HANDSET B Transmit | BTCR | BTAR | C |
| Receive | C | ATBR | CTBR |
| HANDSET C Transmit | CTAR | C | CTBR |
| Receive | BTCR | C | ATCR |

FIG. 18C

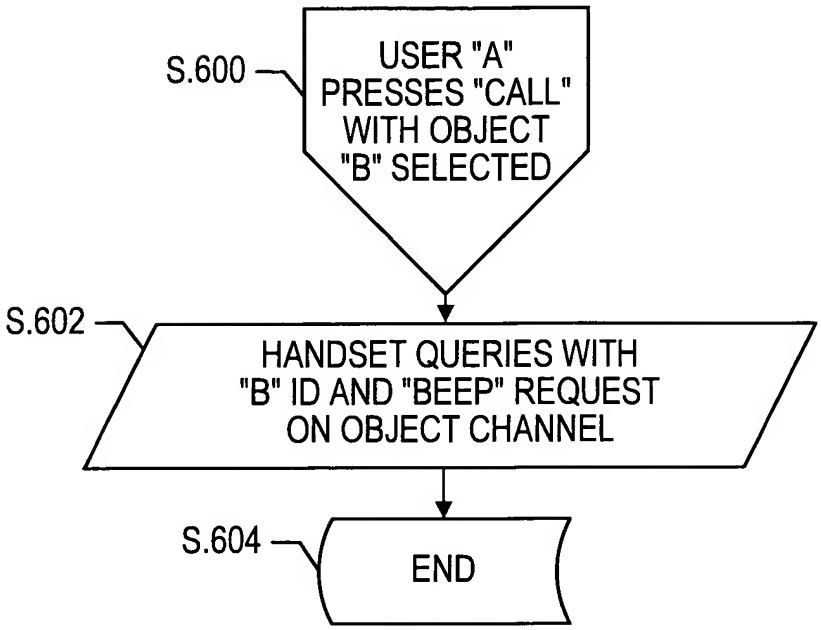



FIG. 19A

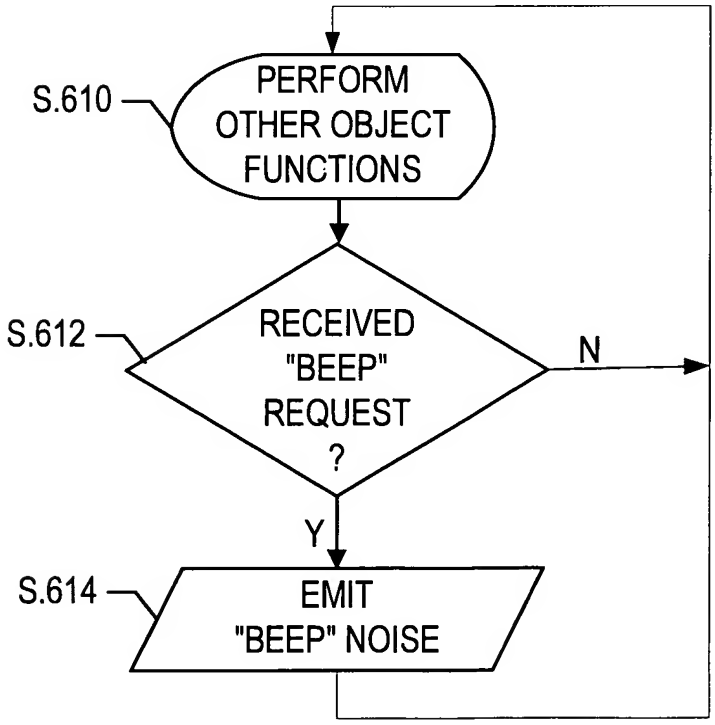



FIG. 19B

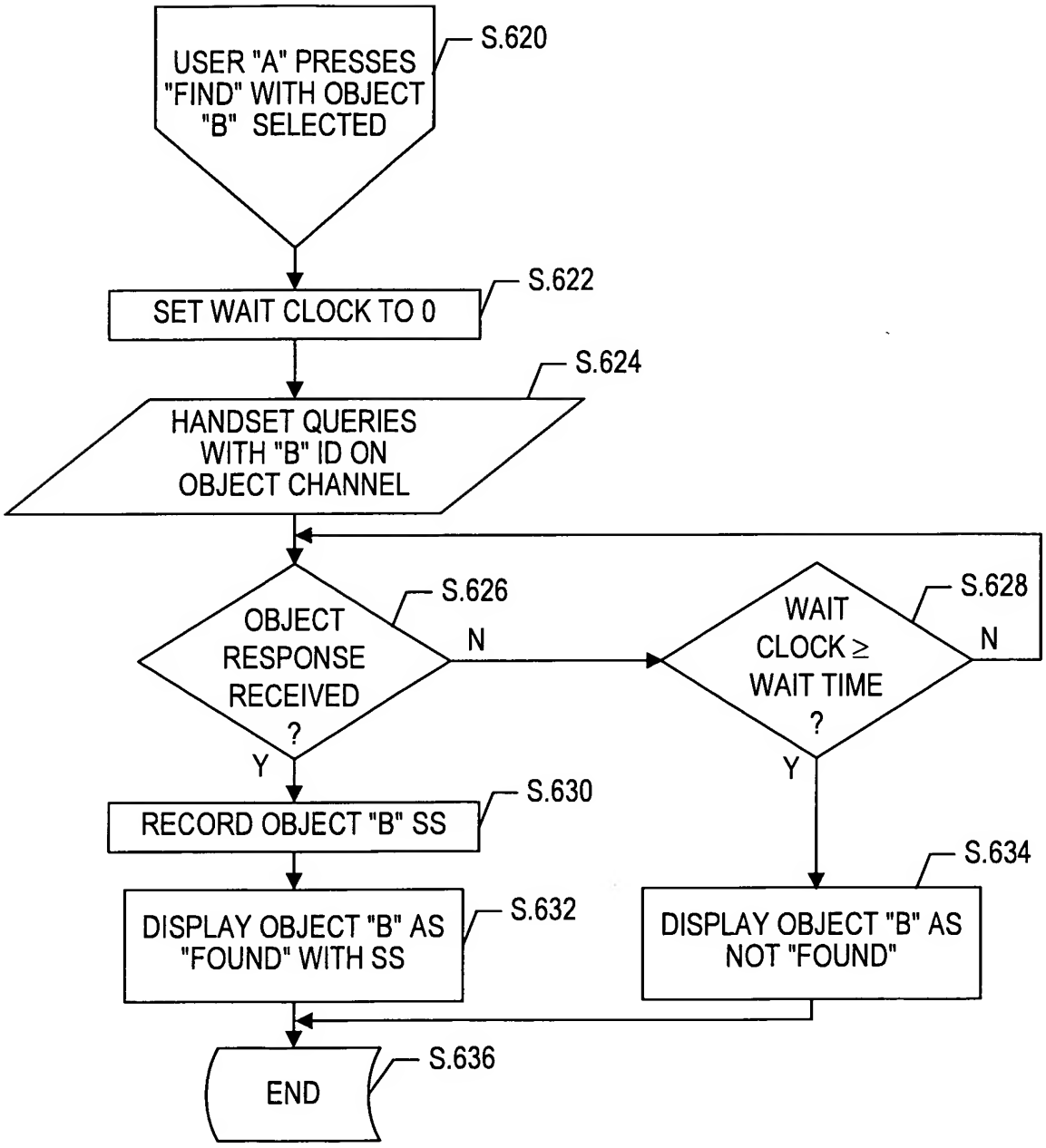

USER "A" PRESSES "FIND" WITH OBJECT "B" SELECTED
S.620
SET WAIT CLOCK TO 0
S.622
HANDSET QUERIES WITH "B" ID ON OBJECT CHANNEL
S.624
OBJECT RESPONSE RECEIVED ?
S.626
N
Y
WAIT CLOCK ≥ WAIT TIME ?
S.628
N
Y
RECORD OBJECT "B" SS
S.630
DISPLAY OBJECT "B" AS "FOUND" WITH SS
S.632
DISPLAY OBJECT "B" AS NOT "FOUND"
S.634
END
S.636

FIG. 20A

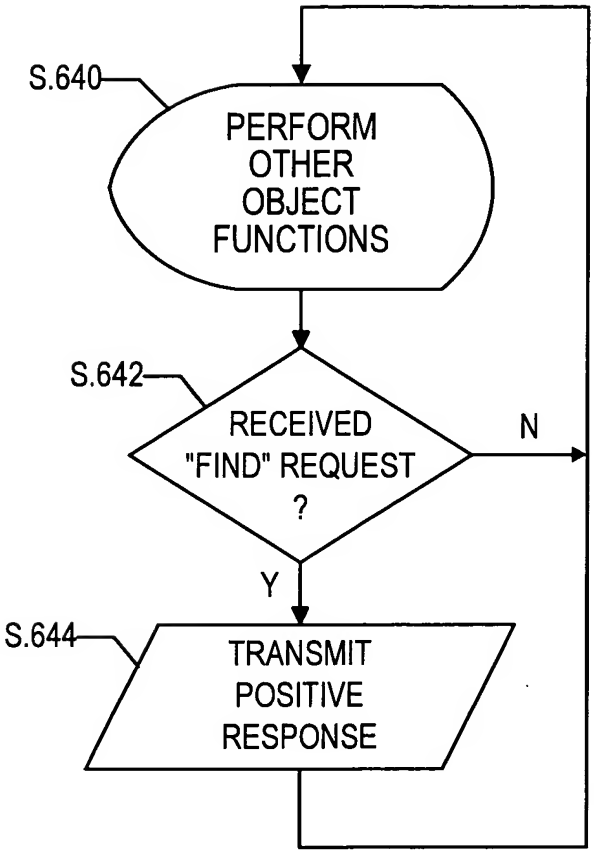

S.640
PERFORM OTHER OBJECT FUNCTIONS
S.642
RECEIVED "FIND" REQUEST ?
N
Y
S.644
TRANSMIT POSITIVE RESPONSE

FIG. 20B

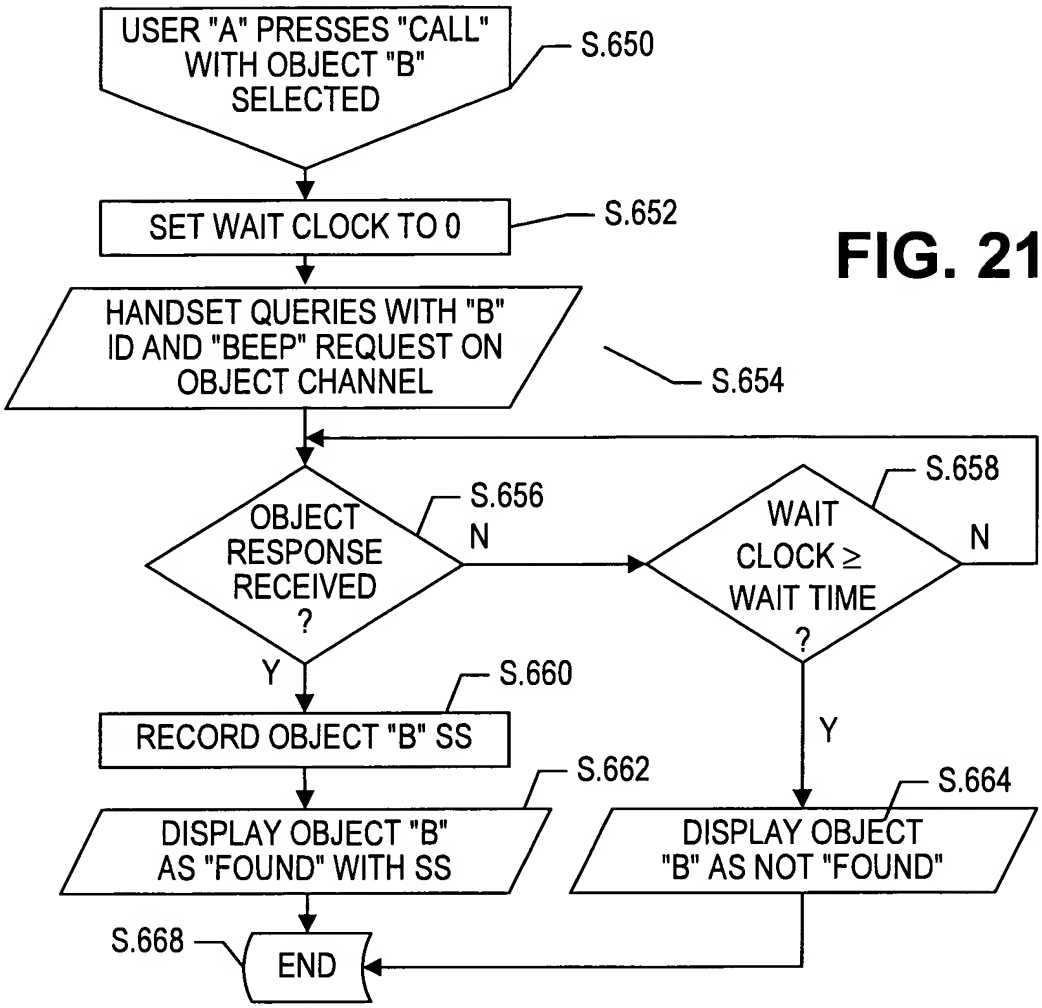



FIG. 21A

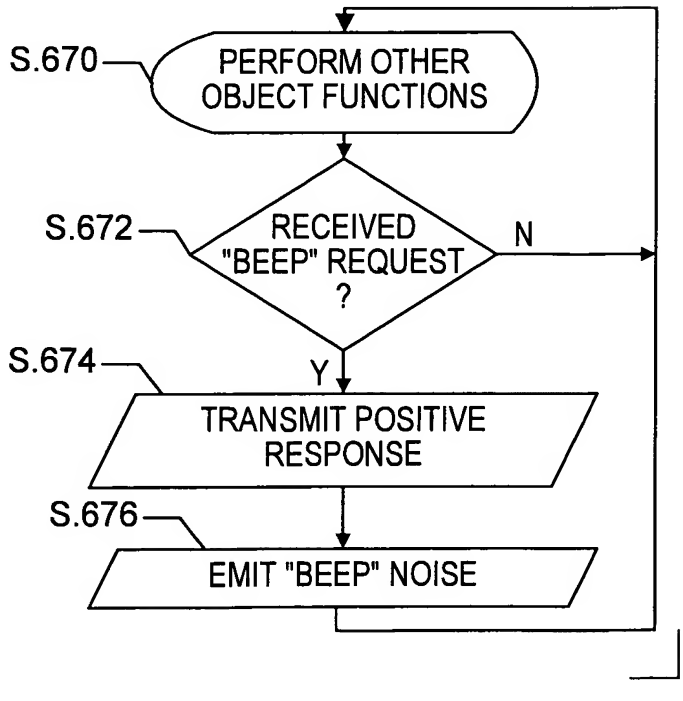
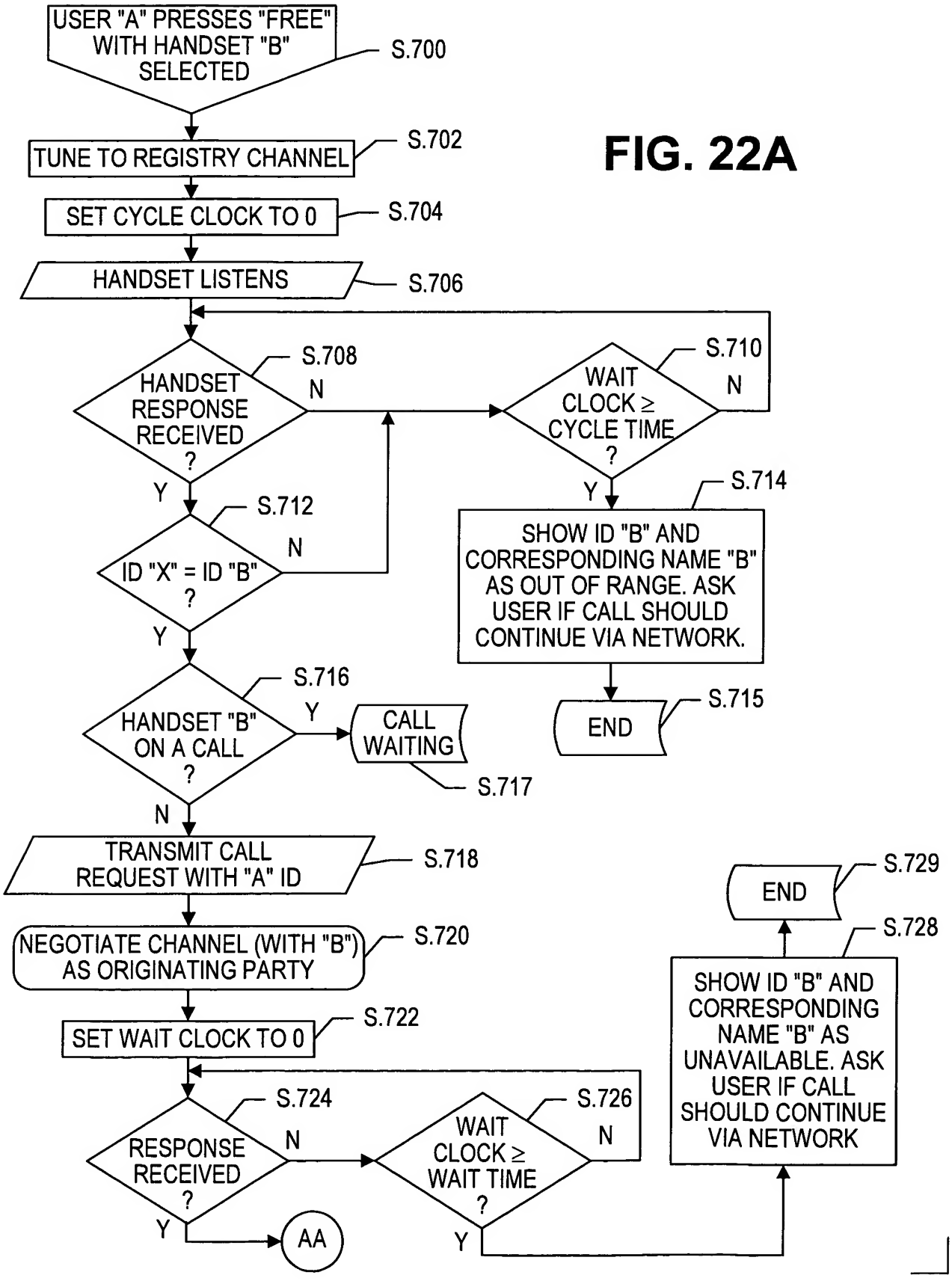



FIG. 21B

REPLACEMENT SHEET

FIG. 22A



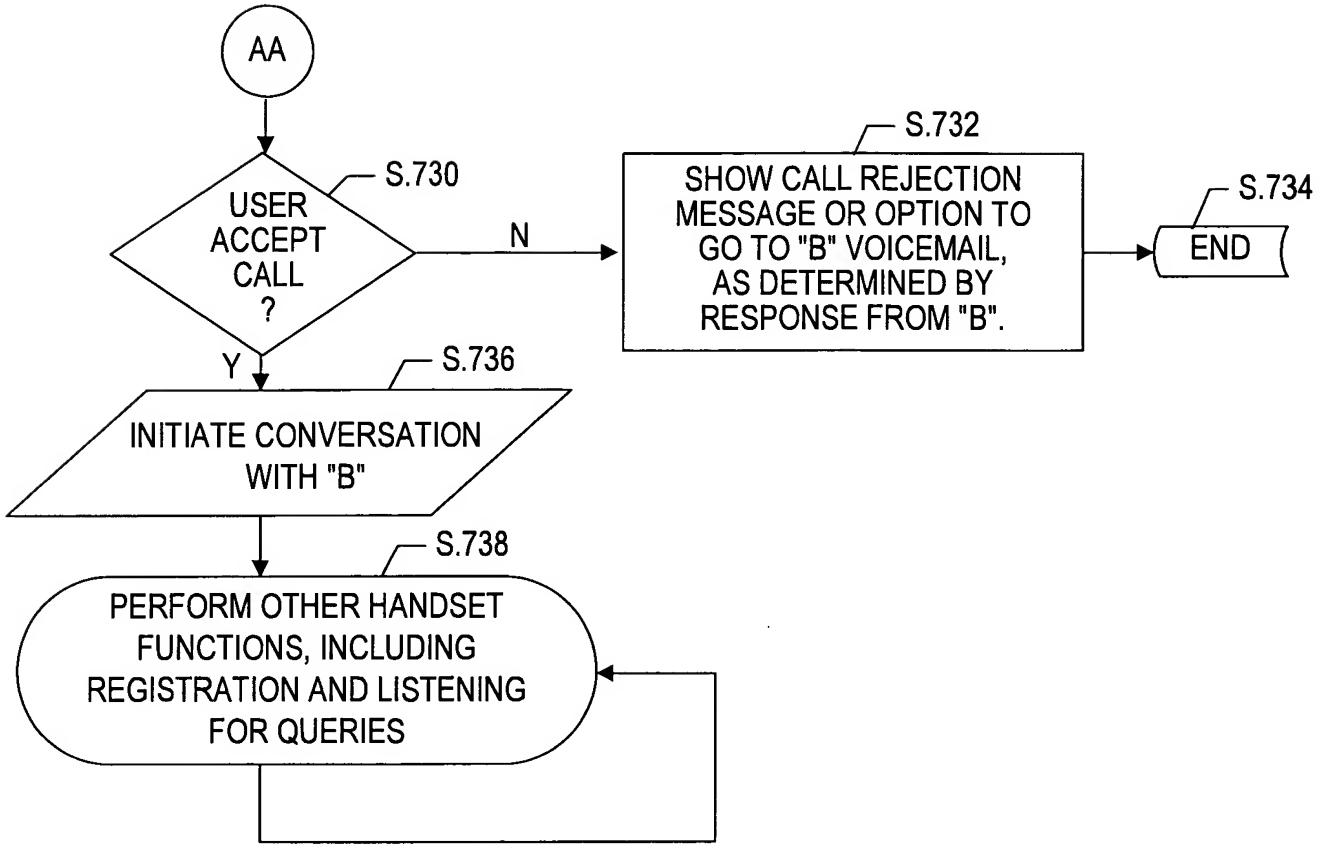

AA
S.730
USER ACCEPT CALL ?
N
S.732
SHOW CALL REJECTION MESSAGE OR OPTION TO GO TO "B" VOICEMAIL, AS DETERMINED BY RESPONSE FROM "B".
S.734
END
Y
S.736
INITIATE CONVERSATION WITH "B"
S.738
PERFORM OTHER HANDSET FUNCTIONS, INCLUDING REGISTRATION AND LISTENING FOR QUERIES

FIG. 22B

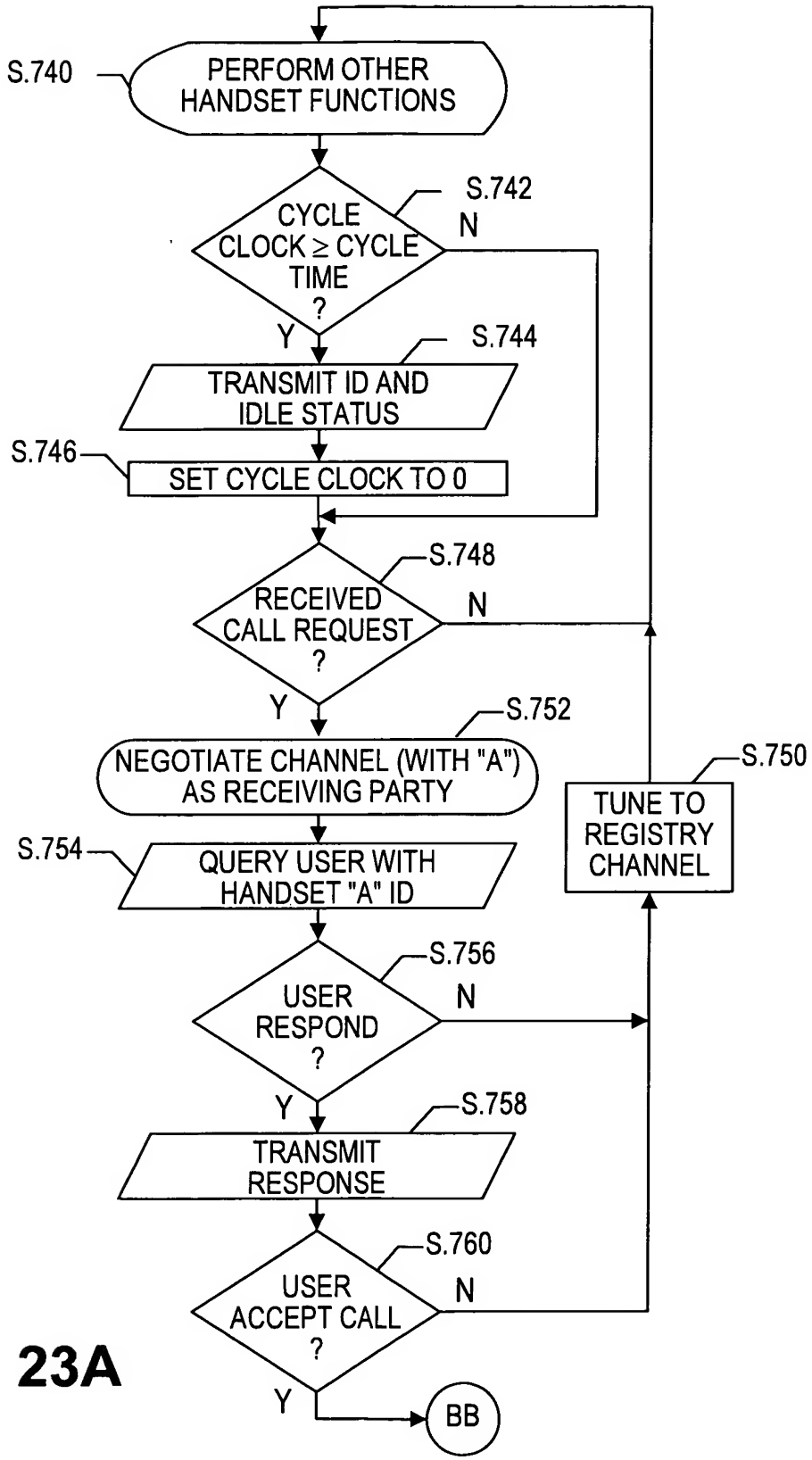

S.740
PERFORM OTHER HANDSET FUNCTIONS
S.742
CYCLE CLOCK ≥ CYCLE TIME ?
N
Y
S.744
TRANSMIT ID AND IDLE STATUS
S.746
SET CYCLE CLOCK TO 0
S.748
RECEIVED CALL REQUEST ?
N
Y
S.752
NEGOTIATE CHANNEL (WITH "A") AS RECEIVING PARTY
S.750
TUNE TO REGISTRY CHANNEL
S.754
QUERY USER WITH HANDSET "A" ID
S.756
USER RESPOND ?
N
Y
S.758
TRANSMIT RESPONSE
S.760
USER ACCEPT CALL ?
N
Y
BB

FIG. 23A

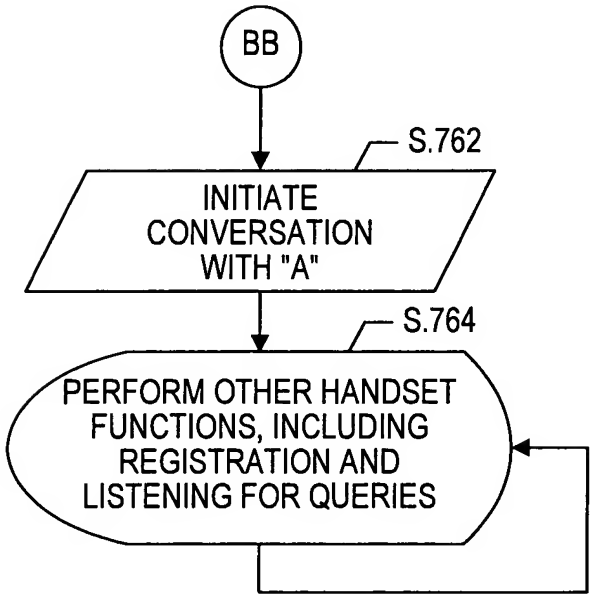

BB
S.762
INITIATE CONVERSATION WITH "A"
S.764
PERFORM OTHER HANDSET FUNCTIONS, INCLUDING REGISTRATION AND LISTENING FOR QUERIES

FIG. 23B

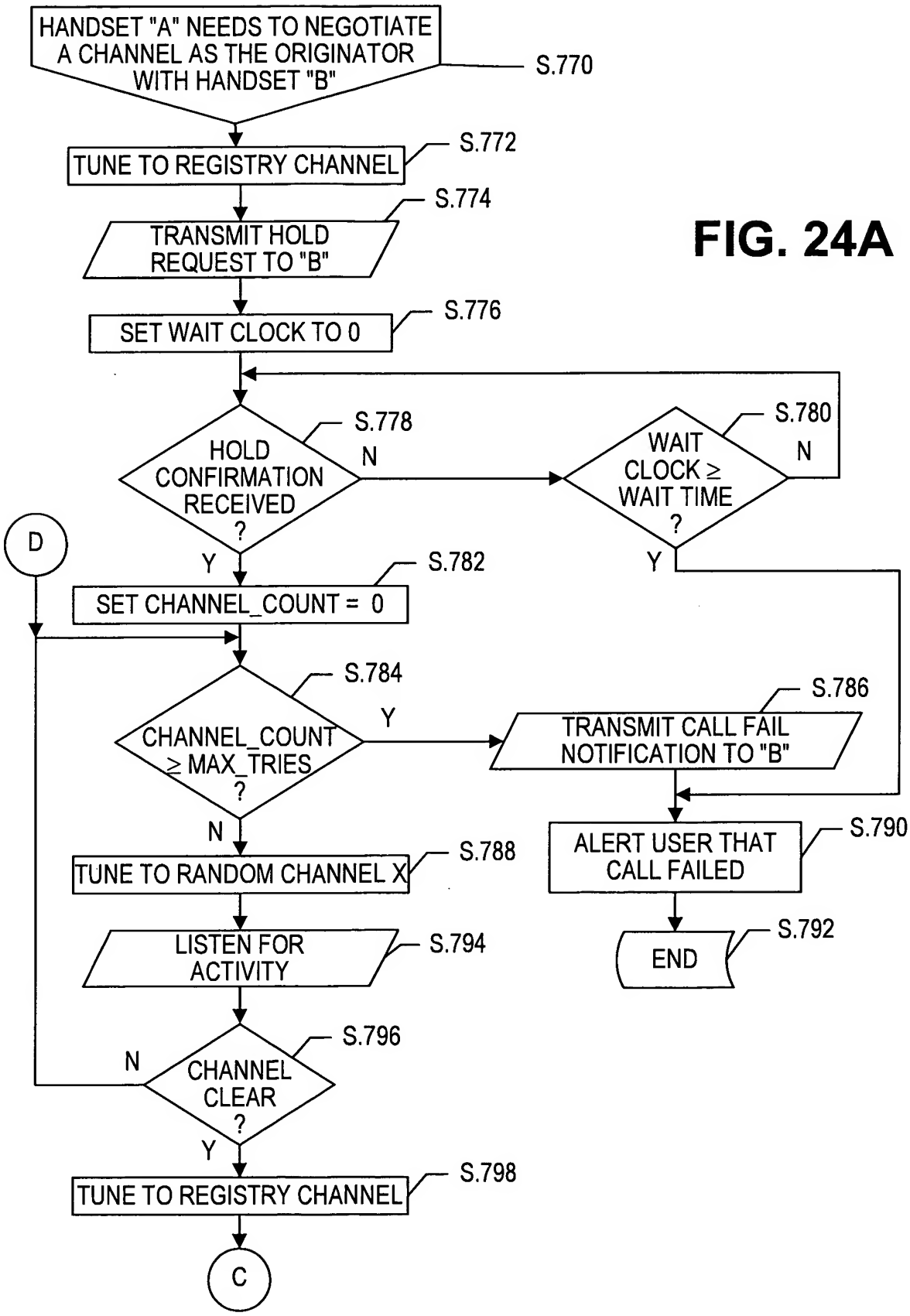

HANDSET "A" NEEDS TO NEGOTIATE A CHANNEL AS THE ORIGINATOR WITH HANDSET "B"
S.770
TUNE TO REGISTRY CHANNEL
S.772
TRANSMIT HOLD REQUEST TO "B"
S.774
SET WAIT CLOCK TO 0
S.776
HOLD CONFIRMATION RECEIVED ?
S.778
N
Y
WAIT CLOCK ≥ WAIT TIME ?
S.780
N
Y
D
SET CHANNEL_COUNT = 0
S.782
CHANNEL_COUNT ≥ MAX_TRIES ?
S.784
Y
N
TRANSMIT CALL FAIL NOTIFICATION TO "B"
S.786
ALERT USER THAT CALL FAILED
S.790
END
S.792
TUNE TO RANDOM CHANNEL X
S.788
LISTEN FOR ACTIVITY
S.794
CHANNEL CLEAR ?
S.796
N
Y
TUNE TO REGISTRY CHANNEL
S.798
C

FIG. 24A

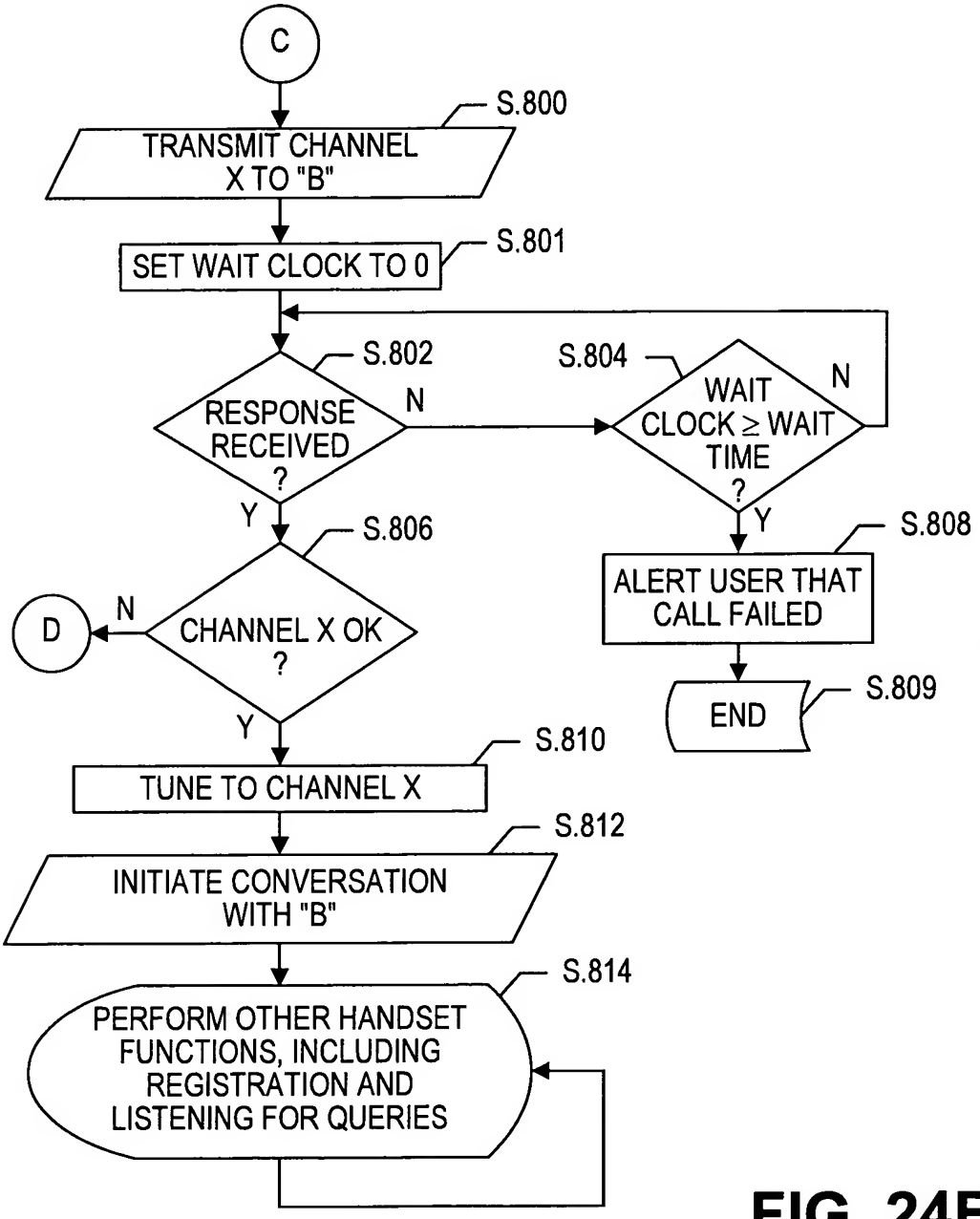

C
S.800
TRANSMIT CHANNEL X TO "B"
S.801
SET WAIT CLOCK TO 0
S.802
RESPONSE RECEIVED ?
N
S.804
WAIT CLOCK ≥ WAIT TIME ?
N
Y
S.808
ALERT USER THAT CALL FAILED
S.809
END
Y
S.806
D
N
CHANNEL X OK ?
Y
S.810
TUNE TO CHANNEL X
S.812
INITIATE CONVERSATION WITH "B"
S.814
PERFORM OTHER HANDSET FUNCTIONS, INCLUDING REGISTRATION AND LISTENING FOR QUERIES

FIG. 24B

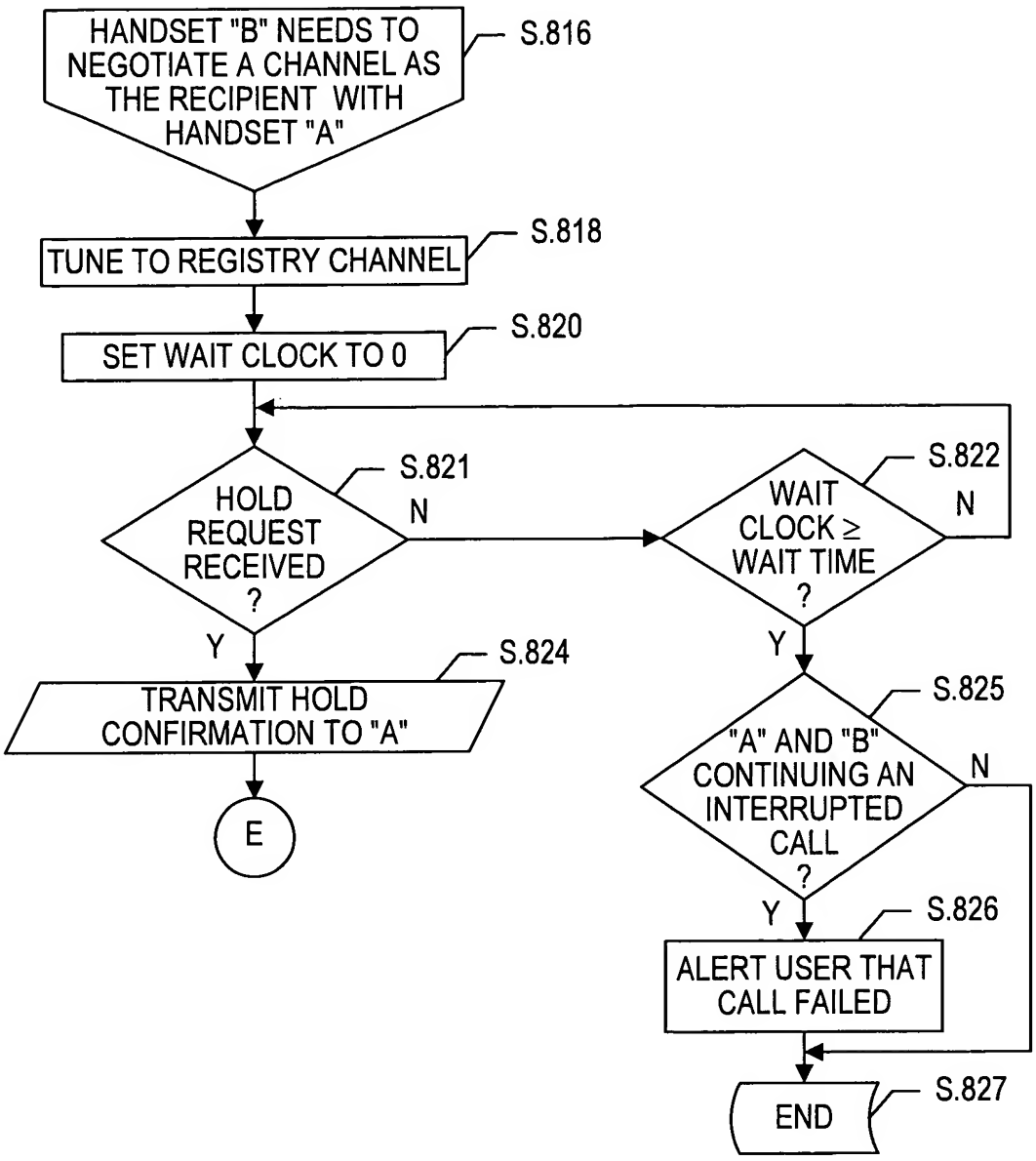

HANDSET "B" NEEDS TO NEGOTIATE A CHANNEL AS THE RECIPIENT WITH HANDSET "A"
S.816
TUNE TO REGISTRY CHANNEL
S.818
SET WAIT CLOCK TO 0
S.820
HOLD REQUEST RECEIVED ?
S.821
N
Y
WAIT CLOCK ≥ WAIT TIME ?
S.822
N
Y
TRANSMIT HOLD CONFIRMATION TO "A"
S.824
E
"A" AND "B" CONTINUING AN INTERRUPTED CALL ?
S.825
N
Y
ALERT USER THAT CALL FAILED
S.826
END
S.827

FIG. 25A

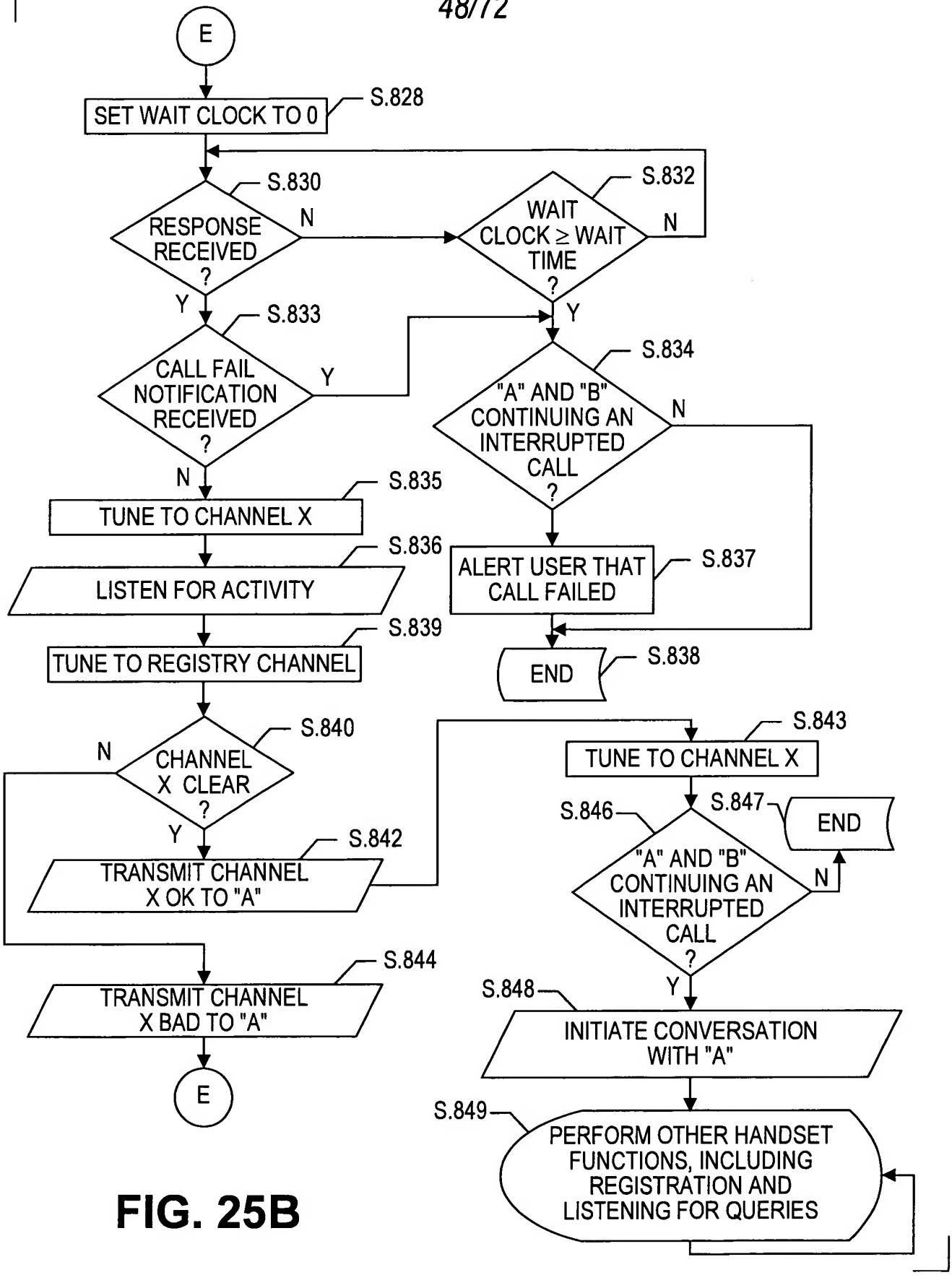
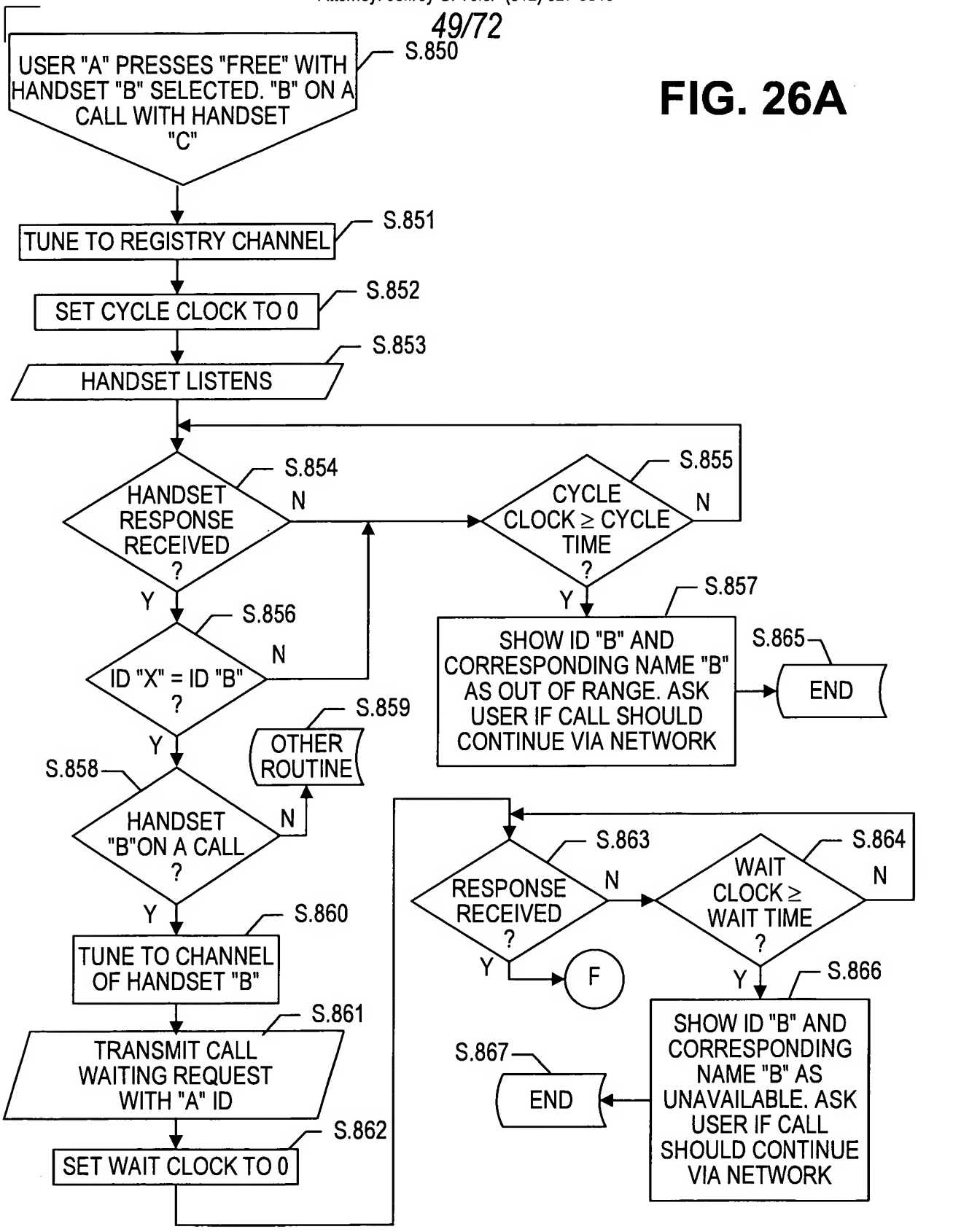

E
SET WAIT CLOCK TO 0
S.828
S.830
RESPONSE RECEIVED ?
N
Y
S.832
WAIT CLOCK ≥ WAIT TIME ?
N
Y
S.833
CALL FAIL NOTIFICATION RECEIVED ?
Y
N
S.834
"A" AND "B" CONTINUING AN INTERRUPTED CALL ?
N
S.835
TUNE TO CHANNEL X
S.836
LISTEN FOR ACTIVITY
S.837
ALERT USER THAT CALL FAILED
S.839
TUNE TO REGISTRY CHANNEL
S.838
END
S.840
CHANNEL X CLEAR ?
N
Y
S.842
TRANSMIT CHANNEL X OK TO "A"
S.843
TUNE TO CHANNEL X
S.846
"A" AND "B" CONTINUING AN INTERRUPTED CALL ?
N
Y
S.847
END
S.844
TRANSMIT CHANNEL X BAD TO "A"
E
S.848
INITIATE CONVERSATION WITH "A"
S.849
PERFORM OTHER HANDSET FUNCTIONS, INCLUDING REGISTRATION AND LISTENING FOR QUERIES

FIG. 25B

FIG. 26A


USER "A" PRESSES "FREE" WITH HANDSET "B" SELECTED. "B" ON A CALL WITH HANDSET "C"
S.850
TUNE TO REGISTRY CHANNEL
S.851
SET CYCLE CLOCK TO 0
S.852
HANDSET LISTENS
S.853
HANDSET RESPONSE RECEIVED ?
S.854
N
Y
CYCLE CLOCK ≥ CYCLE TIME ?
S.855
N
Y
ID "X" = ID "B" ?
S.856
N
Y
SHOW ID "B" AND CORRESPONDING NAME "B" AS OUT OF RANGE. ASK USER IF CALL SHOULD CONTINUE VIA NETWORK
S.857
S.865
END
OTHER ROUTINE
S.859
HANDSET "B"ON A CALL ?
S.858
N
Y
TUNE TO CHANNEL OF HANDSET "B"
S.860
TRANSMIT CALL WAITING REQUEST WITH "A" ID
S.861
SET WAIT CLOCK TO 0
S.862
RESPONSE RECEIVED ?
S.863
N
Y
F
WAIT CLOCK ≥ WAIT TIME ?
S.864
N
Y
SHOW ID "B" AND CORRESPONDING NAME "B" AS UNAVAILABLE. ASK USER IF CALL SHOULD CONTINUE VIA NETWORK
S.866
END
S.867

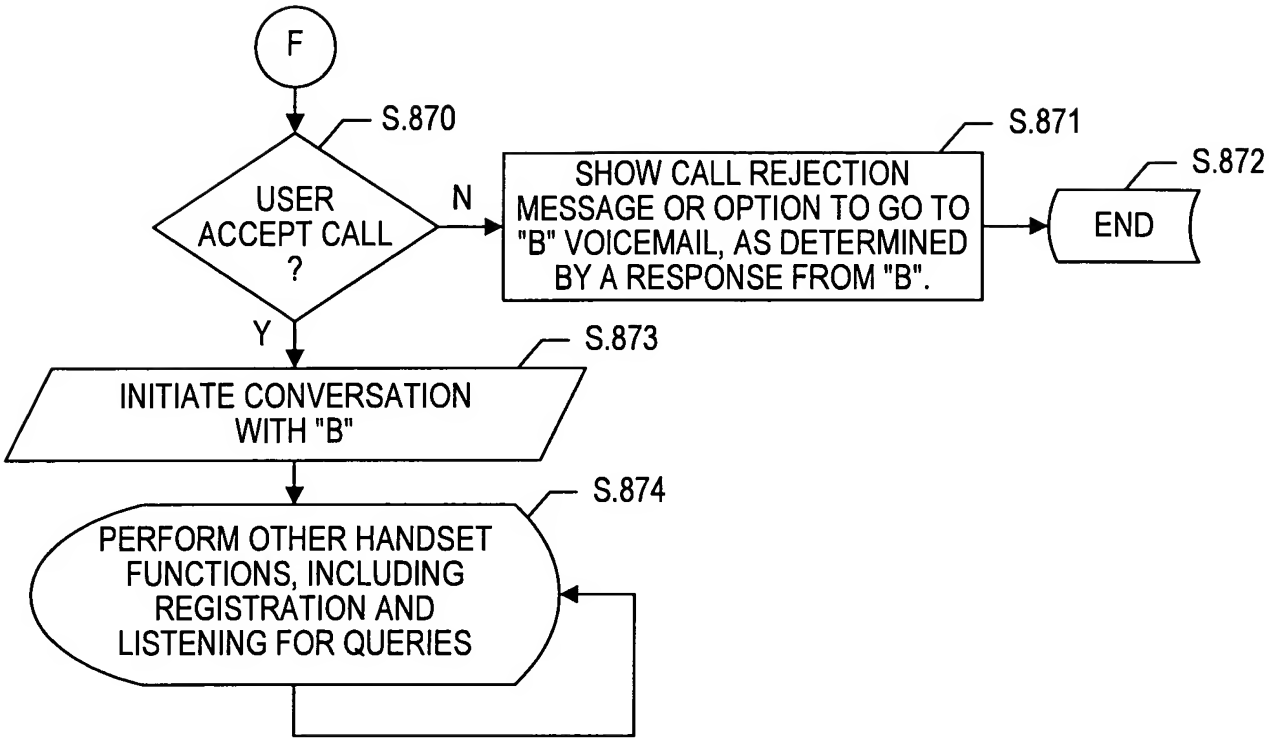

F
S.870
USER ACCEPT CALL ?
N
S.871
SHOW CALL REJECTION MESSAGE OR OPTION TO GO TO "B" VOICEMAIL, AS DETERMINED BY A RESPONSE FROM "B".
S.872
END
Y
S.873
INITIATE CONVERSATION WITH "B"
S.874
PERFORM OTHER HANDSET FUNCTIONS, INCLUDING REGISTRATION AND LISTENING FOR QUERIES

FIG. 26B

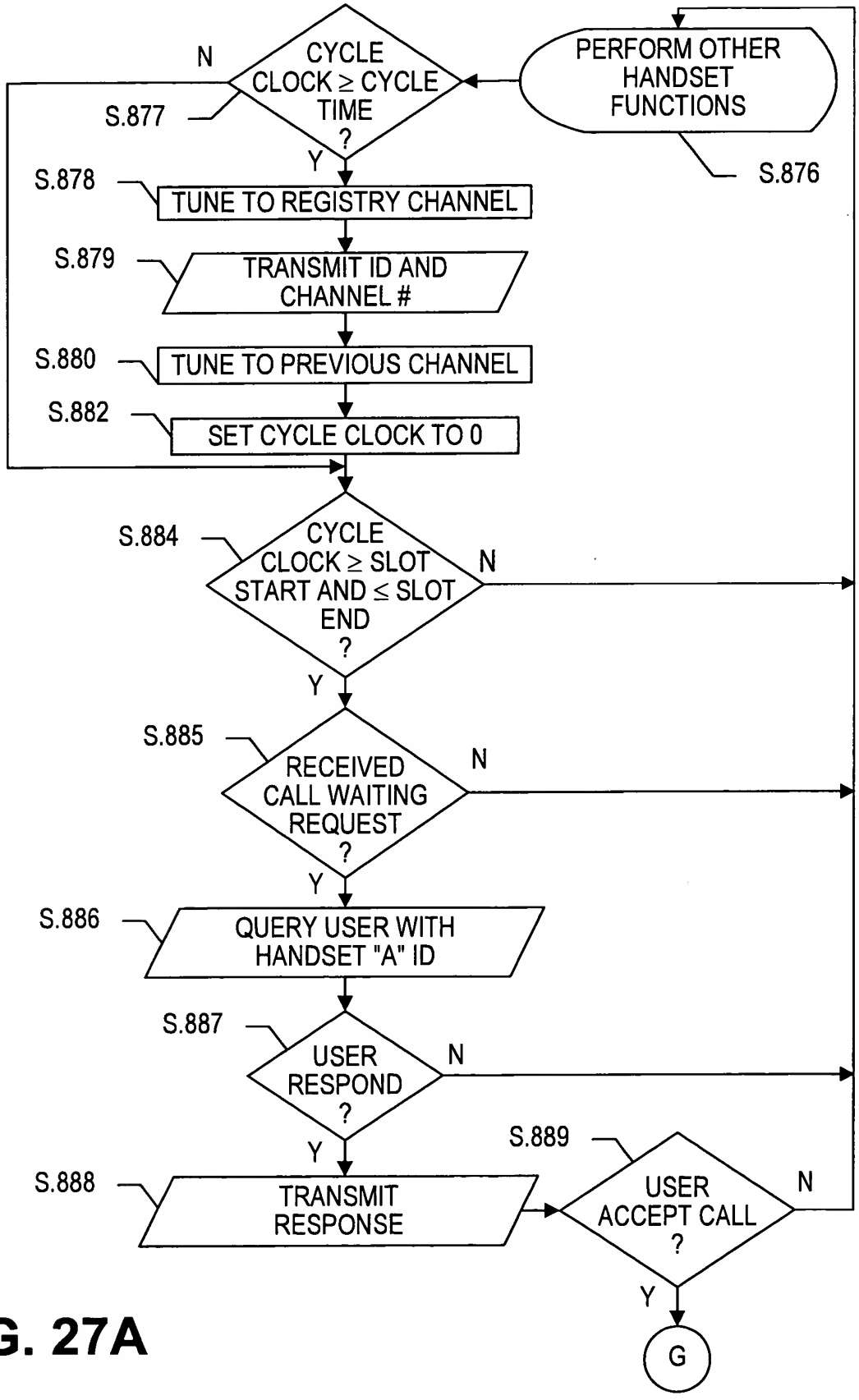

CYCLE CLOCK ≥ CYCLE TIME ?
N
S.877
Y
PERFORM OTHER HANDSET FUNCTIONS
S.876
S.878
TUNE TO REGISTRY CHANNEL
S.879
TRANSMIT ID AND CHANNEL #
S.880
TUNE TO PREVIOUS CHANNEL
S.882
SET CYCLE CLOCK TO 0
S.884
CYCLE CLOCK ≥ SLOT START AND ≤ SLOT END ?
N
Y
S.885
RECEIVED CALL WAITING REQUEST ?
N
Y
S.886
QUERY USER WITH HANDSET "A" ID
S.887
USER RESPOND ?
N
Y
S.889
USER ACCEPT CALL ?
N
Y
S.888
TRANSMIT RESPONSE
G

FIG. 27A

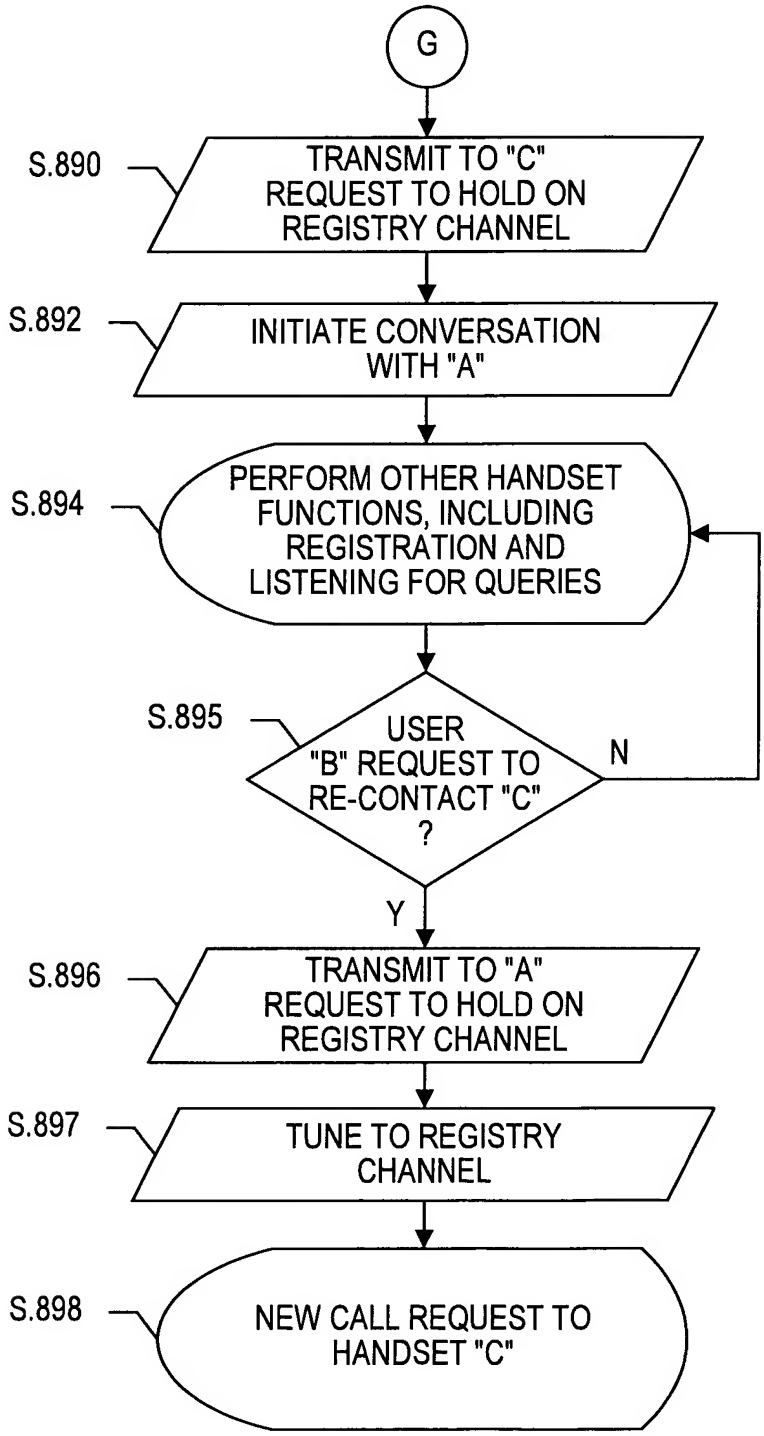

G
S.890
TRANSMIT TO "C" REQUEST TO HOLD ON REGISTRY CHANNEL
S.892
INITIATE CONVERSATION WITH "A"
S.894
PERFORM OTHER HANDSET FUNCTIONS, INCLUDING REGISTRATION AND LISTENING FOR QUERIES
S.895
USER "B" REQUEST TO RE-CONTACT "C" ?
N
Y
S.896
TRANSMIT TO "A" REQUEST TO HOLD ON REGISTRY CHANNEL
S.897
TUNE TO REGISTRY CHANNEL
S.898
NEW CALL REQUEST TO HANDSET "C"

FIG. 27B

REPLACEMENT SHEET

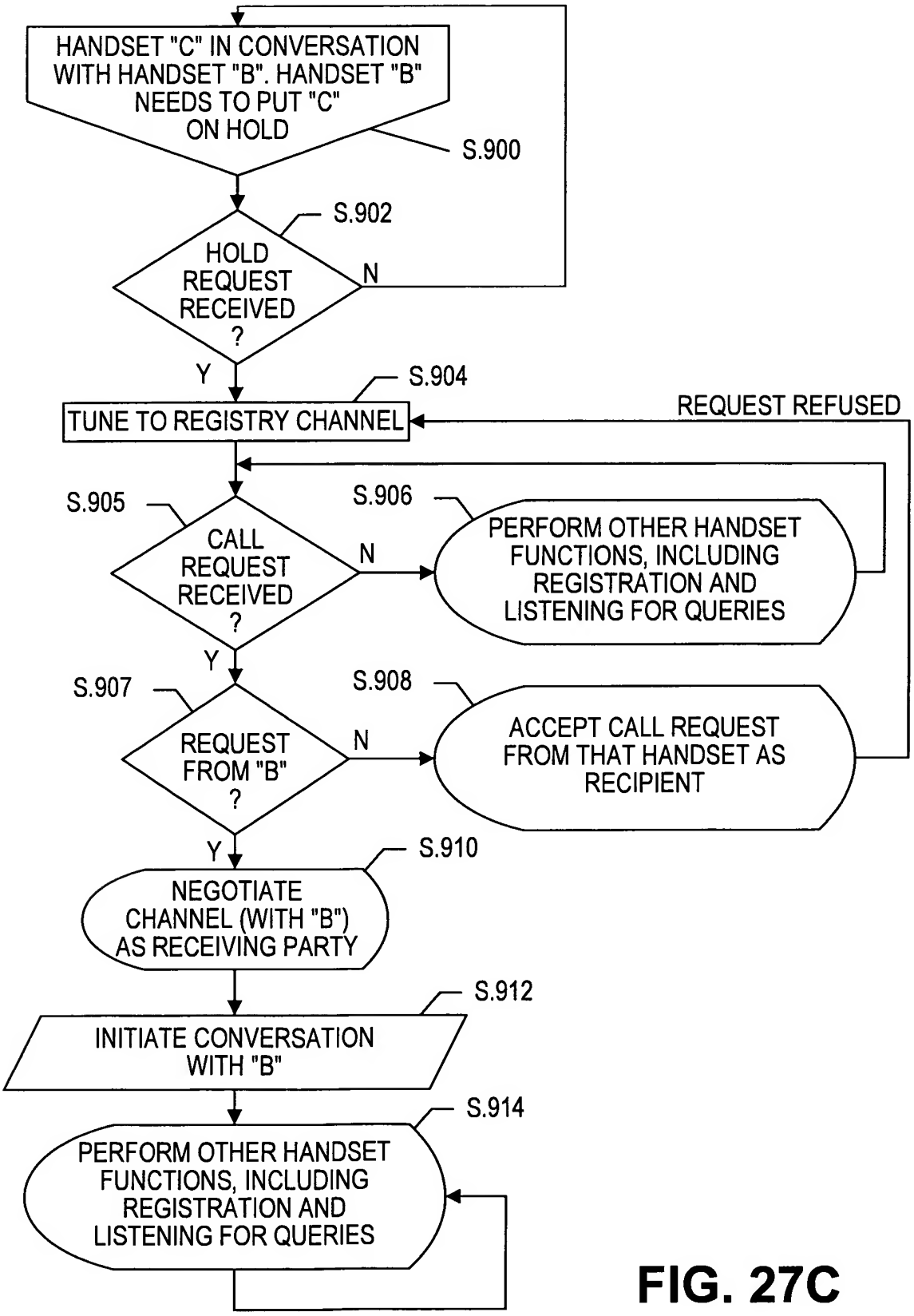



FIG. 27C

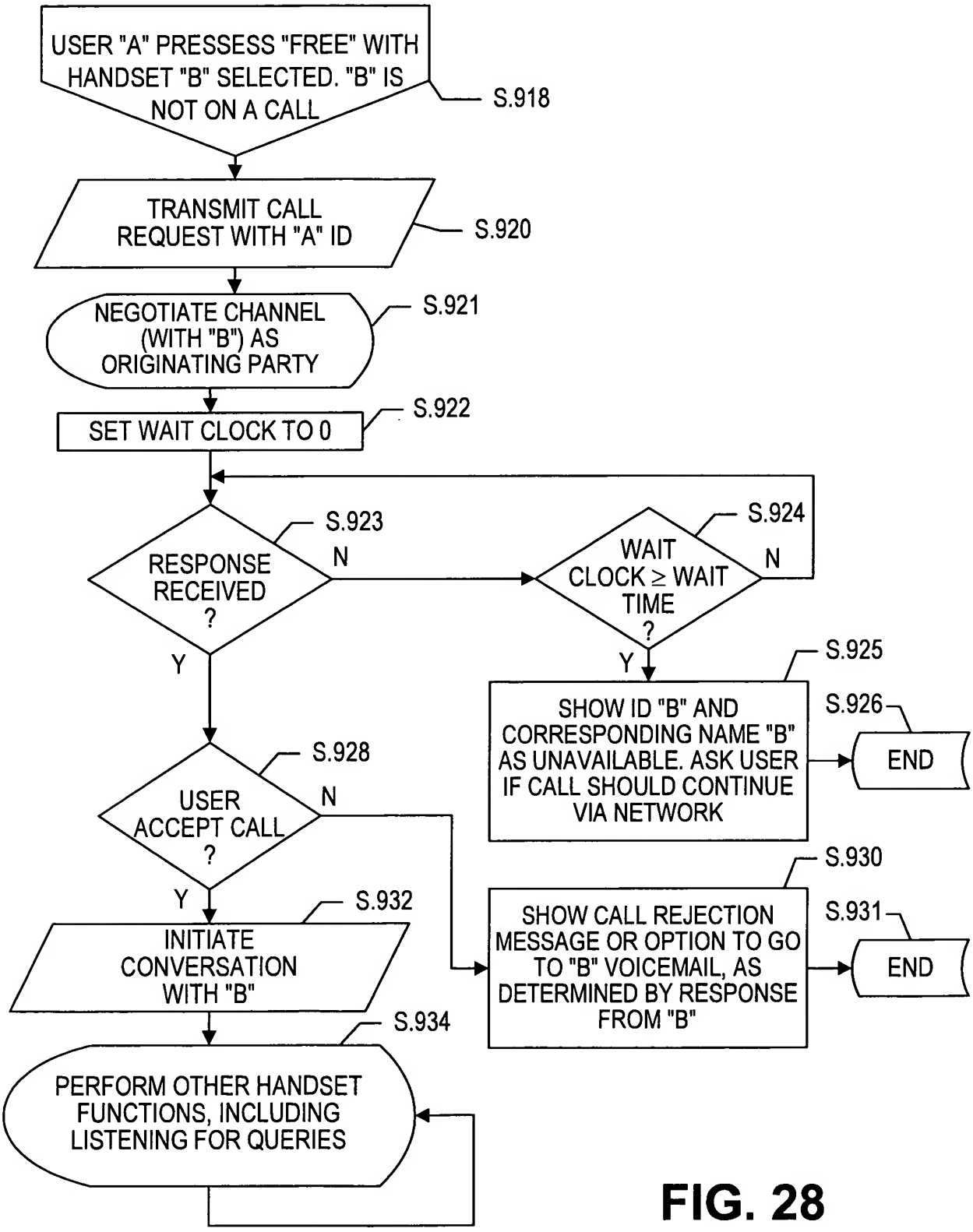

USER "A" PRESSESS "FREE" WITH HANDSET "B" SELECTED. "B" IS NOT ON A CALL
S.918
TRANSMIT CALL REQUEST WITH "A" ID
S.920
NEGOTIATE CHANNEL (WITH "B") AS ORIGINATING PARTY
S.921
SET WAIT CLOCK TO 0
S.922
RESPONSE RECEIVED ?
S.923
N
Y
WAIT CLOCK ≥ WAIT TIME ?
S.924
N
Y
SHOW ID "B" AND CORRESPONDING NAME "B" AS UNAVAILABLE. ASK USER IF CALL SHOULD CONTINUE VIA NETWORK
S.925
S.926
END
USER ACCEPT CALL ?
S.928
N
Y
INITIATE CONVERSATION WITH "B"
S.932
SHOW CALL REJECTION MESSAGE OR OPTION TO GO TO "B" VOICEMAIL, AS DETERMINED BY RESPONSE FROM "B"
S.930
S.931
END
PERFORM OTHER HANDSET FUNCTIONS, INCLUDING LISTENING FOR QUERIES
S.934

FIG. 28

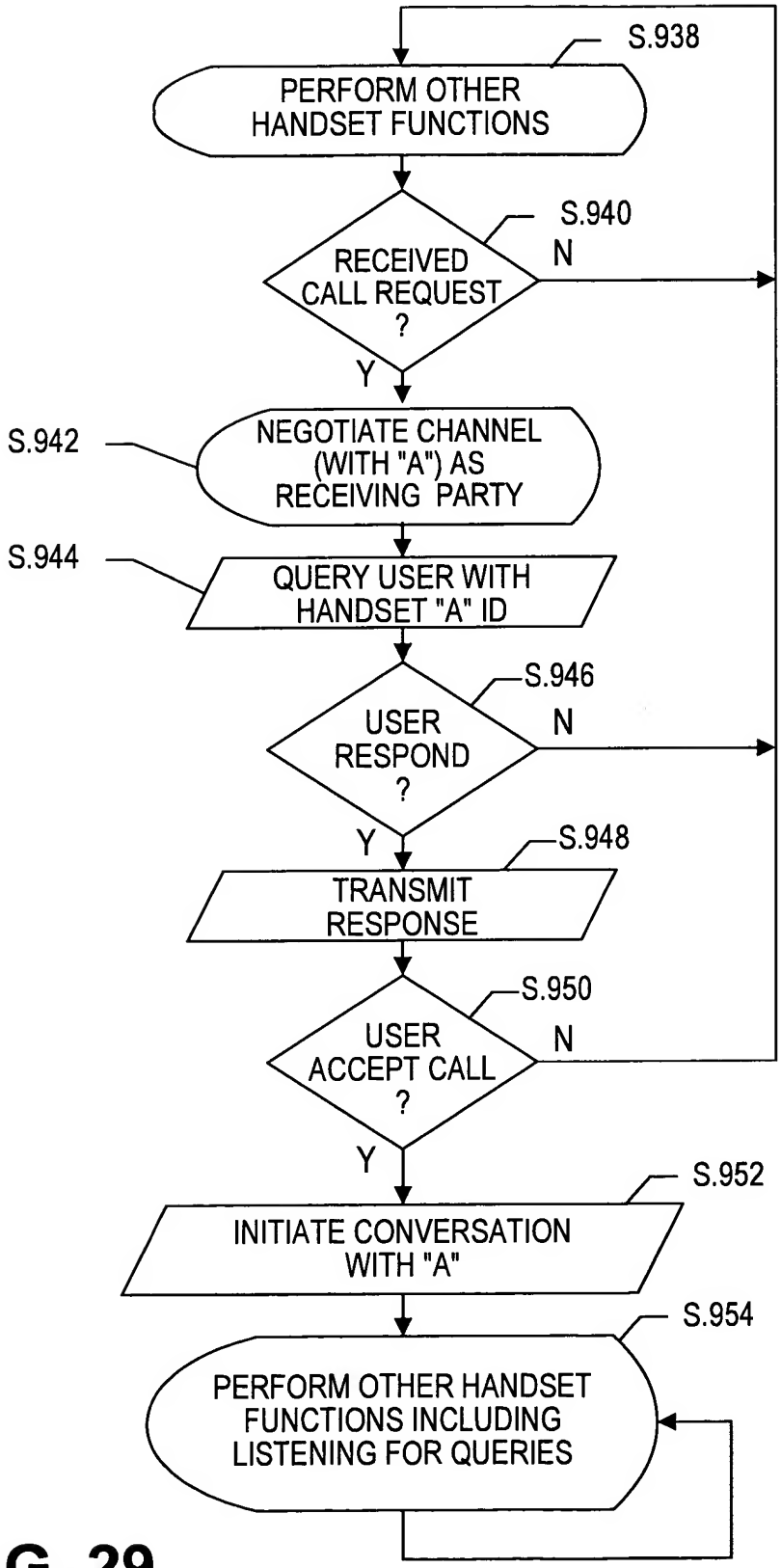
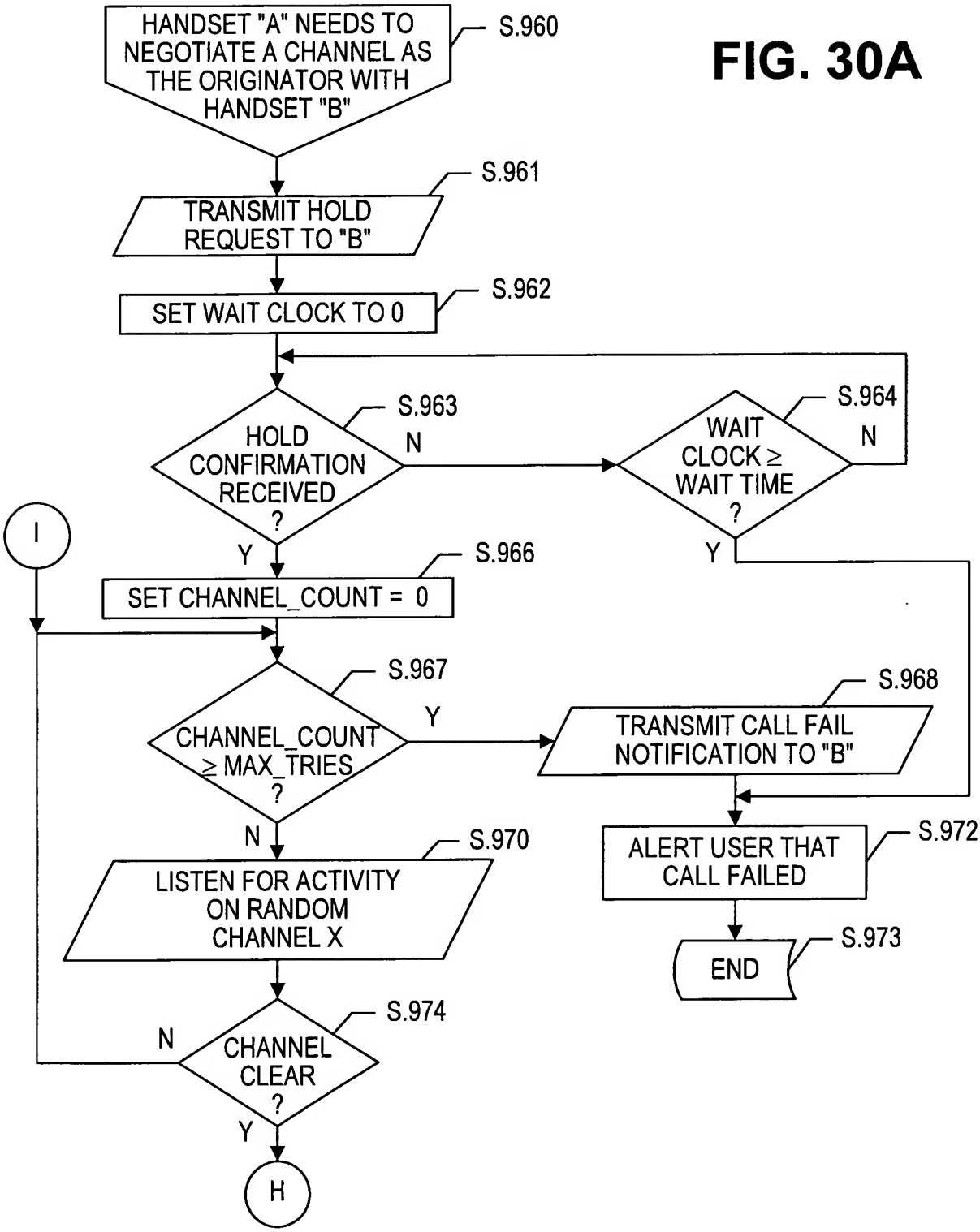

S.938
PERFORM OTHER HANDSET FUNCTIONS
S.940
RECEIVED CALL REQUEST ?
N
Y
S.942
NEGOTIATE CHANNEL (WITH "A") AS RECEIVING PARTY
S.944
QUERY USER WITH HANDSET "A" ID
S.946
USER RESPOND ?
N
Y
S.948
TRANSMIT RESPONSE
S.950
USER ACCEPT CALL ?
N
Y
S.952
INITIATE CONVERSATION WITH "A"
S.954
PERFORM OTHER HANDSET FUNCTIONS INCLUDING LISTENING FOR QUERIES

FIG. 29

FIG. 30A


HANDSET "A" NEEDS TO NEGOTIATE A CHANNEL AS THE ORIGINATOR WITH HANDSET "B"
S.960
TRANSMIT HOLD REQUEST TO "B"
S.961
SET WAIT CLOCK TO 0
S.962
HOLD CONFIRMATION RECEIVED ?
S.963
N
Y
WAIT CLOCK ≥ WAIT TIME ?
S.964
N
Y
I
SET CHANNEL_COUNT = 0
S.966
CHANNEL_COUNT ≥ MAX_TRIES ?
S.967
Y
N
TRANSMIT CALL FAIL NOTIFICATION TO "B"
S.968
ALERT USER THAT CALL FAILED
S.972
END
S.973
LISTEN FOR ACTIVITY ON RANDOM CHANNEL X
S.970
CHANNEL CLEAR ?
S.974
N
Y
H

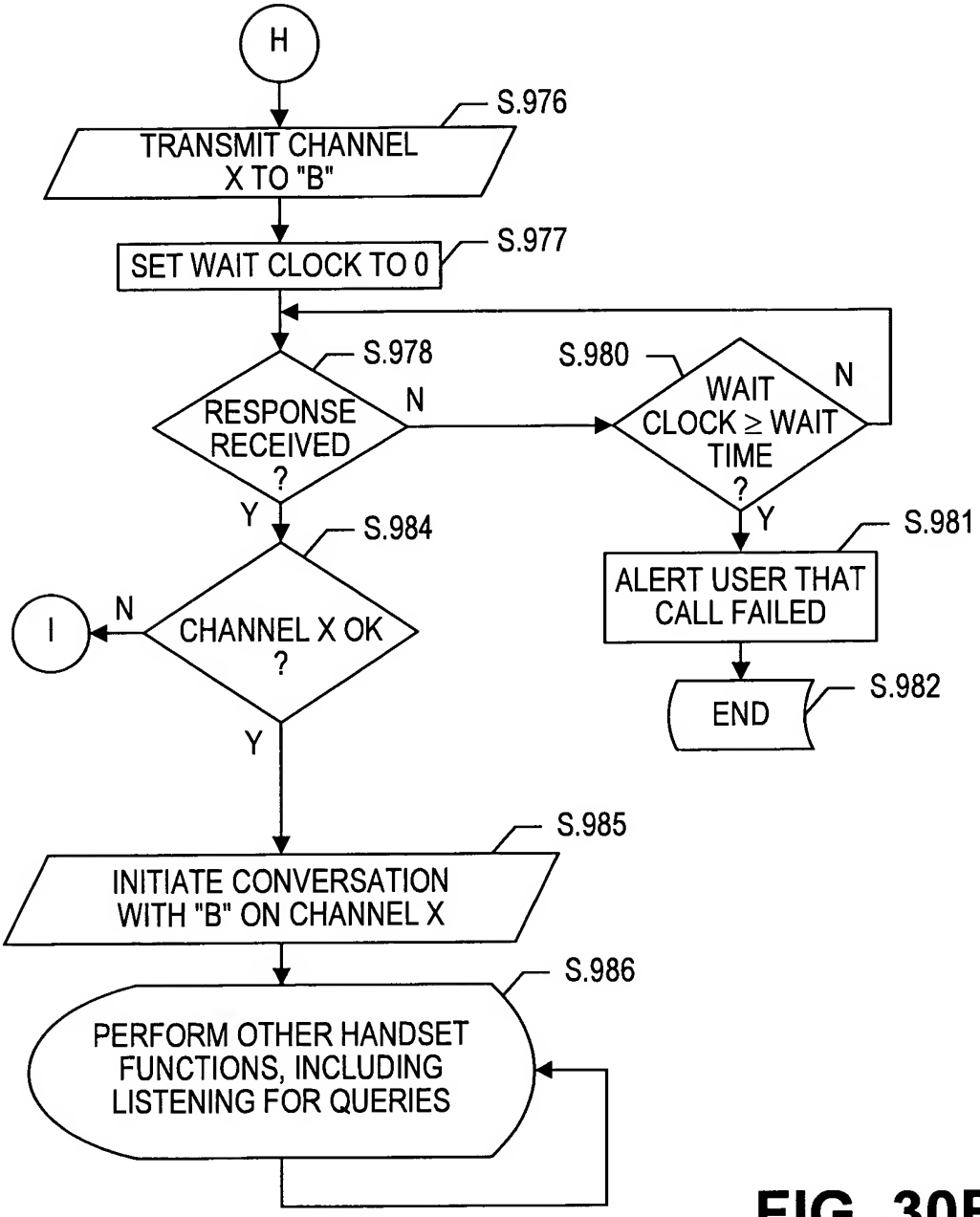

H
S.976
TRANSMIT CHANNEL X TO "B"
S.977
SET WAIT CLOCK TO 0
S.978
RESPONSE RECEIVED ?
N
S.980
WAIT CLOCK ≥ WAIT TIME ?
N
Y
Y
S.984
CHANNEL X OK ?
N
I
Y
S.981
ALERT USER THAT CALL FAILED
S.982
END
S.985
INITIATE CONVERSATION WITH "B" ON CHANNEL X
S.986
PERFORM OTHER HANDSET FUNCTIONS, INCLUDING LISTENING FOR QUERIES

FIG. 30B

REPLACEMENT SHEET

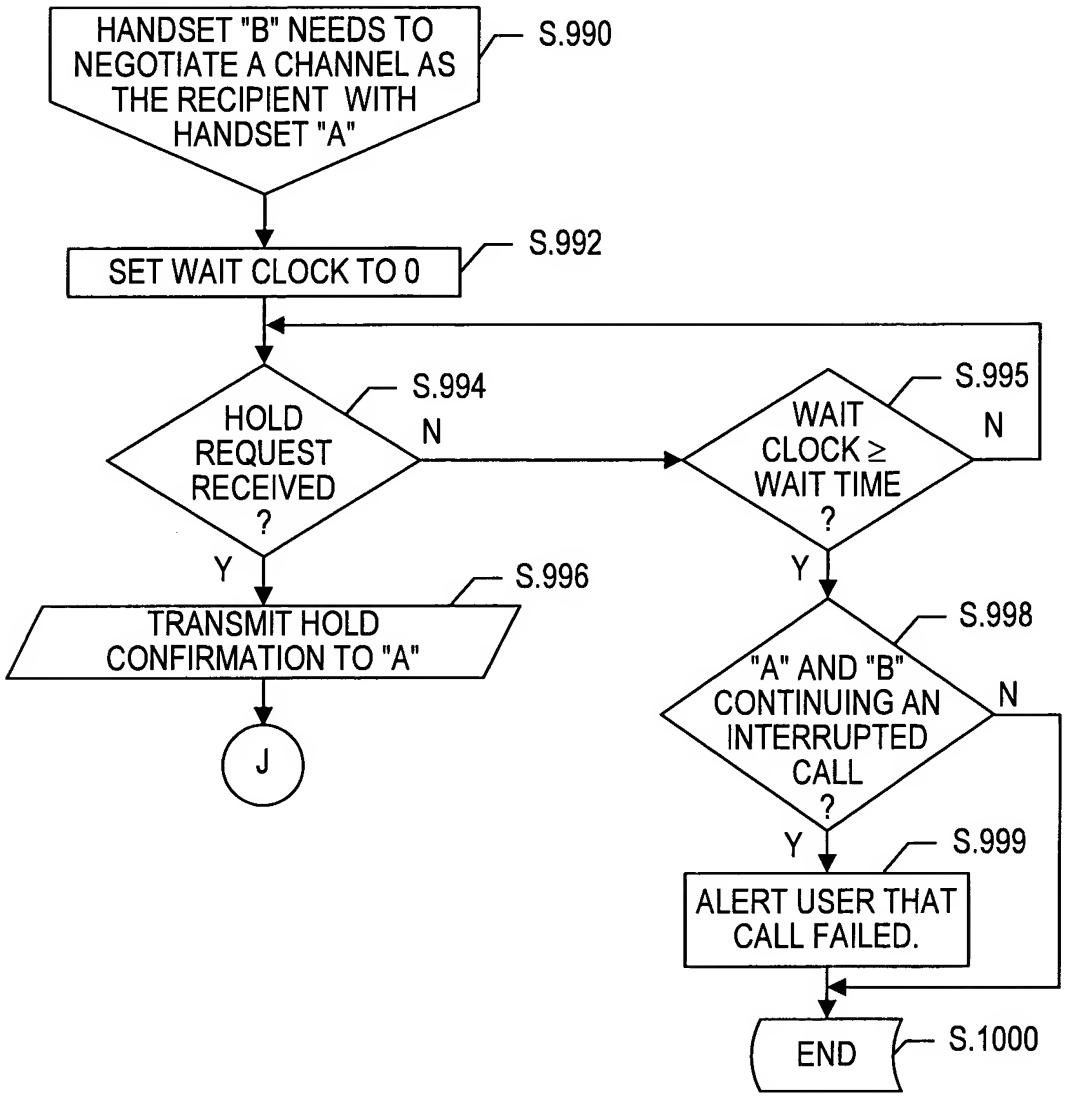



FIG.31A

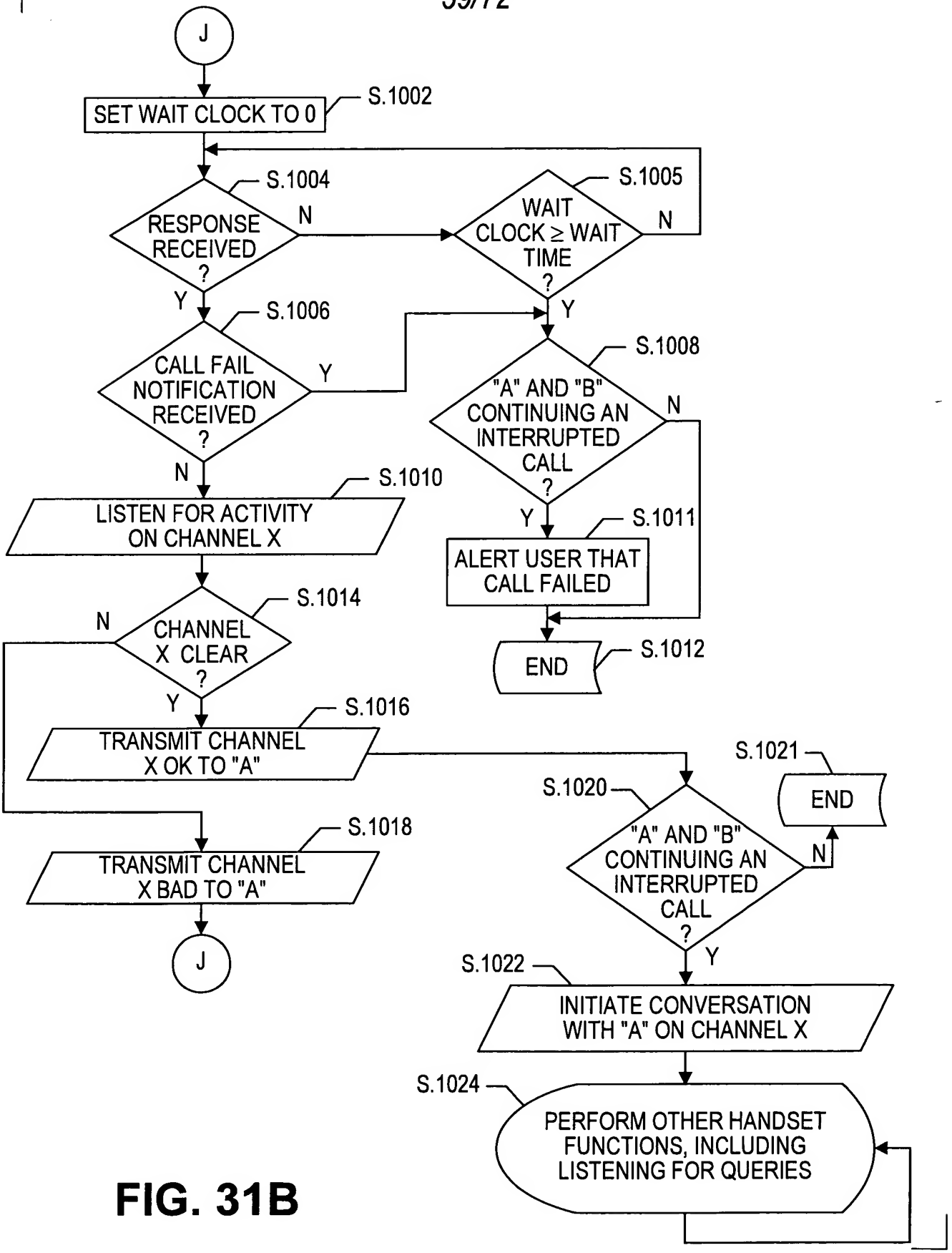

J
SET WAIT CLOCK TO 0
S.1002
S.1004
RESPONSE RECEIVED ?
N
Y
S.1005
WAIT CLOCK ≥ WAIT TIME ?
N
Y
S.1006
CALL FAIL NOTIFICATION RECEIVED ?
Y
N
S.1008
"A" AND "B" CONTINUING AN INTERRUPTED CALL ?
N
Y
S.1010
LISTEN FOR ACTIVITY ON CHANNEL X
S.1011
ALERT USER THAT CALL FAILED
S.1014
CHANNEL X CLEAR ?
N
Y
S.1012
END
S.1016
TRANSMIT CHANNEL X OK TO "A"
S.1018
TRANSMIT CHANNEL X BAD TO "A"
J
S.1020
"A" AND "B" CONTINUING AN INTERRUPTED CALL ?
N
Y
S.1021
END
S.1022
INITIATE CONVERSATION WITH "A" ON CHANNEL X
S.1024
PERFORM OTHER HANDSET FUNCTIONS, INCLUDING LISTENING FOR QUERIES

FIG. 31B

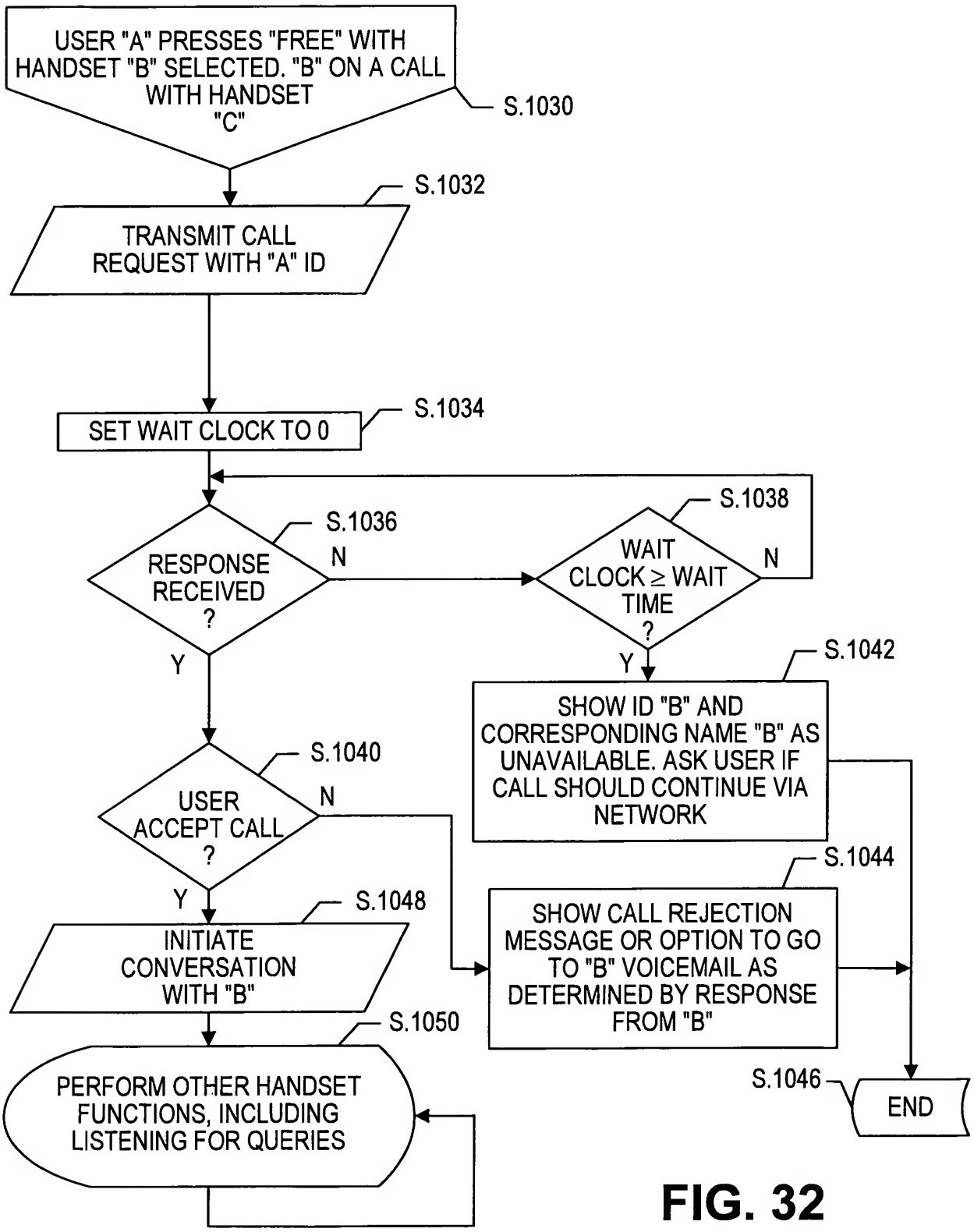

USER "A" PRESSES "FREE" WITH HANDSET "B" SELECTED. "B" ON A CALL WITH HANDSET "C"
S.1030
S.1032
TRANSMIT CALL REQUEST WITH "A" ID
SET WAIT CLOCK TO 0
S.1034
S.1036
RESPONSE RECEIVED ?
N
Y
S.1038
WAIT CLOCK ≥ WAIT TIME ?
N
Y
S.1040
USER ACCEPT CALL ?
N
Y
S.1042
SHOW ID "B" AND CORRESPONDING NAME "B" AS UNAVAILABLE. ASK USER IF CALL SHOULD CONTINUE VIA NETWORK
S.1044
SHOW CALL REJECTION MESSAGE OR OPTION TO GO TO "B" VOICEMAIL AS DETERMINED BY RESPONSE FROM "B"
S.1046
END
S.1048
INITIATE CONVERSATION WITH "B"
S.1050
PERFORM OTHER HANDSET FUNCTIONS, INCLUDING LISTENING FOR QUERIES

FIG. 32

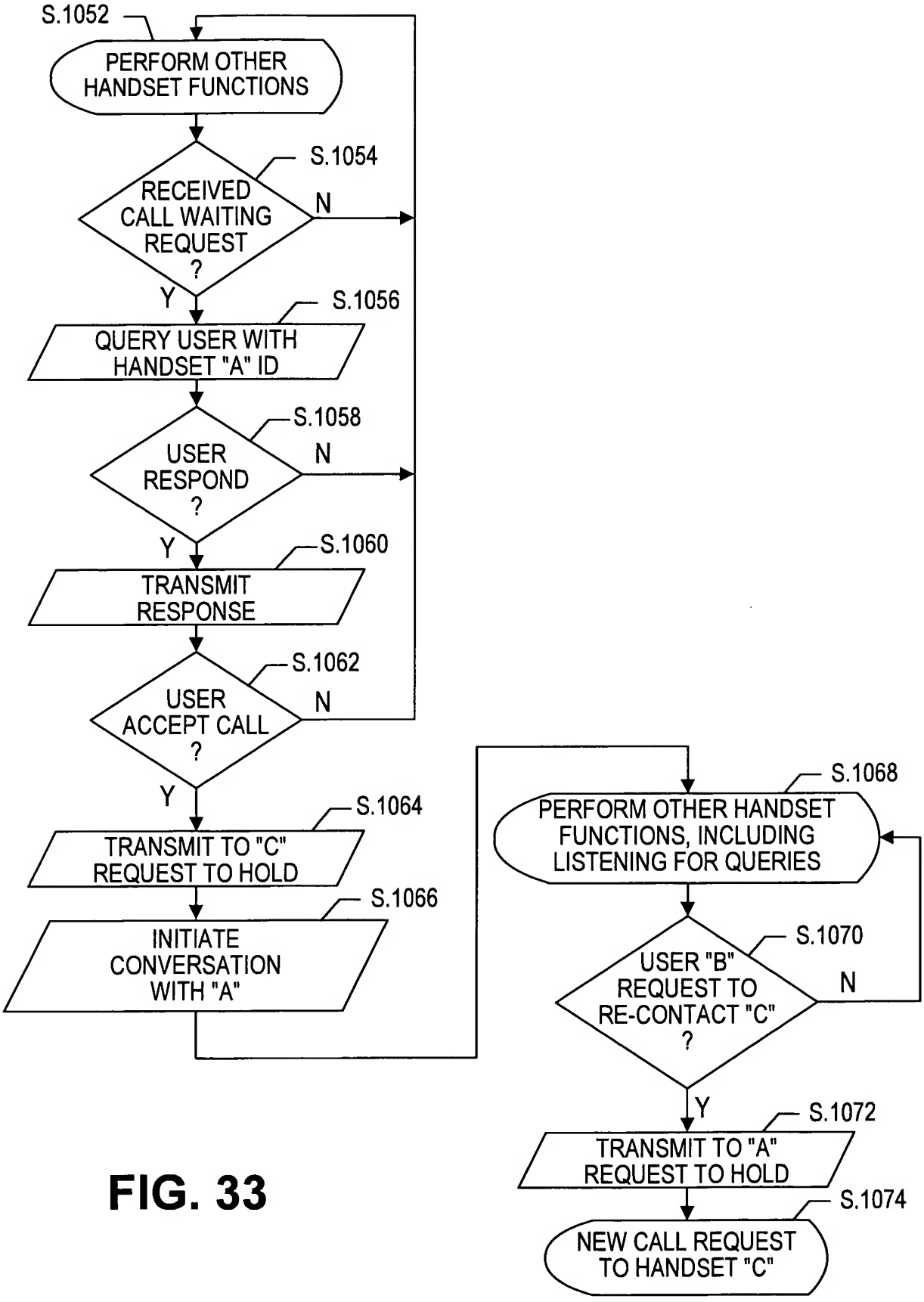

S.1052
PERFORM OTHER HANDSET FUNCTIONS
S.1054
RECEIVED CALL WAITING REQUEST ?
N
Y
S.1056
QUERY USER WITH HANDSET "A" ID
S.1058
USER RESPOND ?
N
Y
S.1060
TRANSMIT RESPONSE
S.1062
USER ACCEPT CALL ?
N
Y
S.1064
TRANSMIT TO "C" REQUEST TO HOLD
S.1066
INITIATE CONVERSATION WITH "A"
S.1068
PERFORM OTHER HANDSET FUNCTIONS, INCLUDING LISTENING FOR QUERIES
S.1070
USER "B" REQUEST TO RE-CONTACT "C" ?
N
Y
S.1072
TRANSMIT TO "A" REQUEST TO HOLD
S.1074
NEW CALL REQUEST TO HANDSET "C"

FIG. 33

REPLACEMENT SHEET

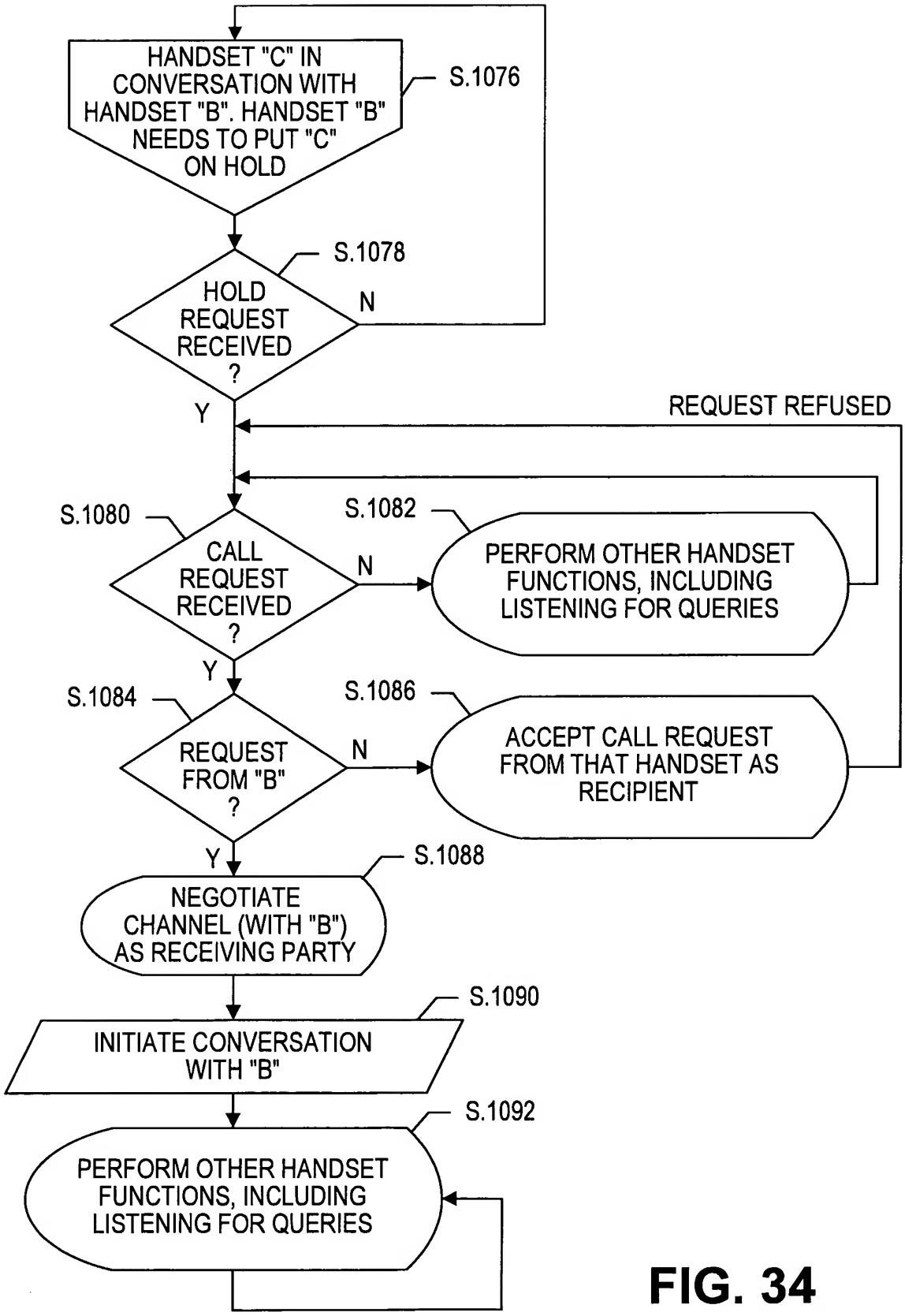



FIG. 34

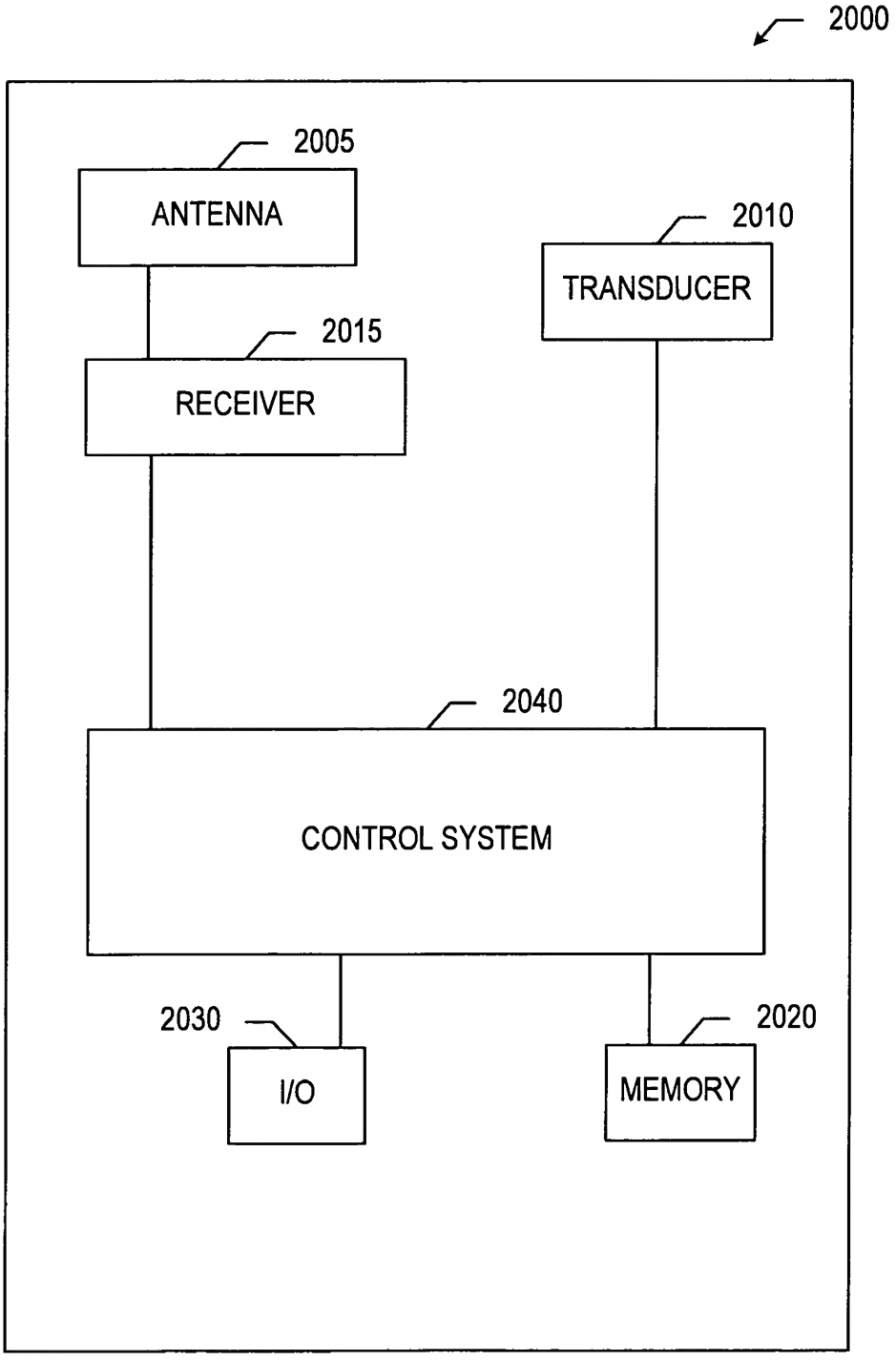

2000
2005
ANTENNA
2010
TRANSDUCER
2015
RECEIVER
2040
CONTROL SYSTEM
2030
I/O
2020
MEMORY

FIG. 35

REPLACEMENT SHEET

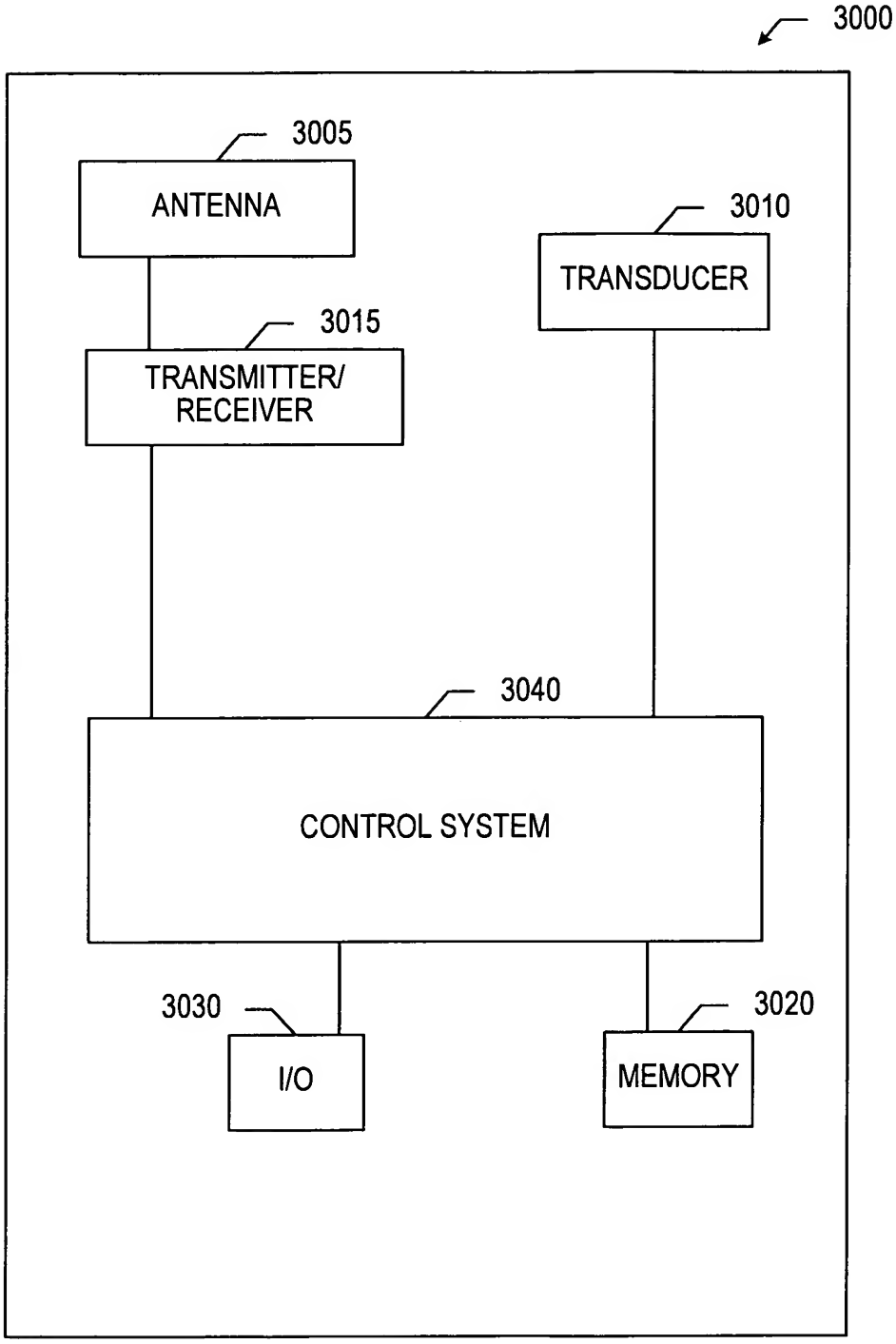
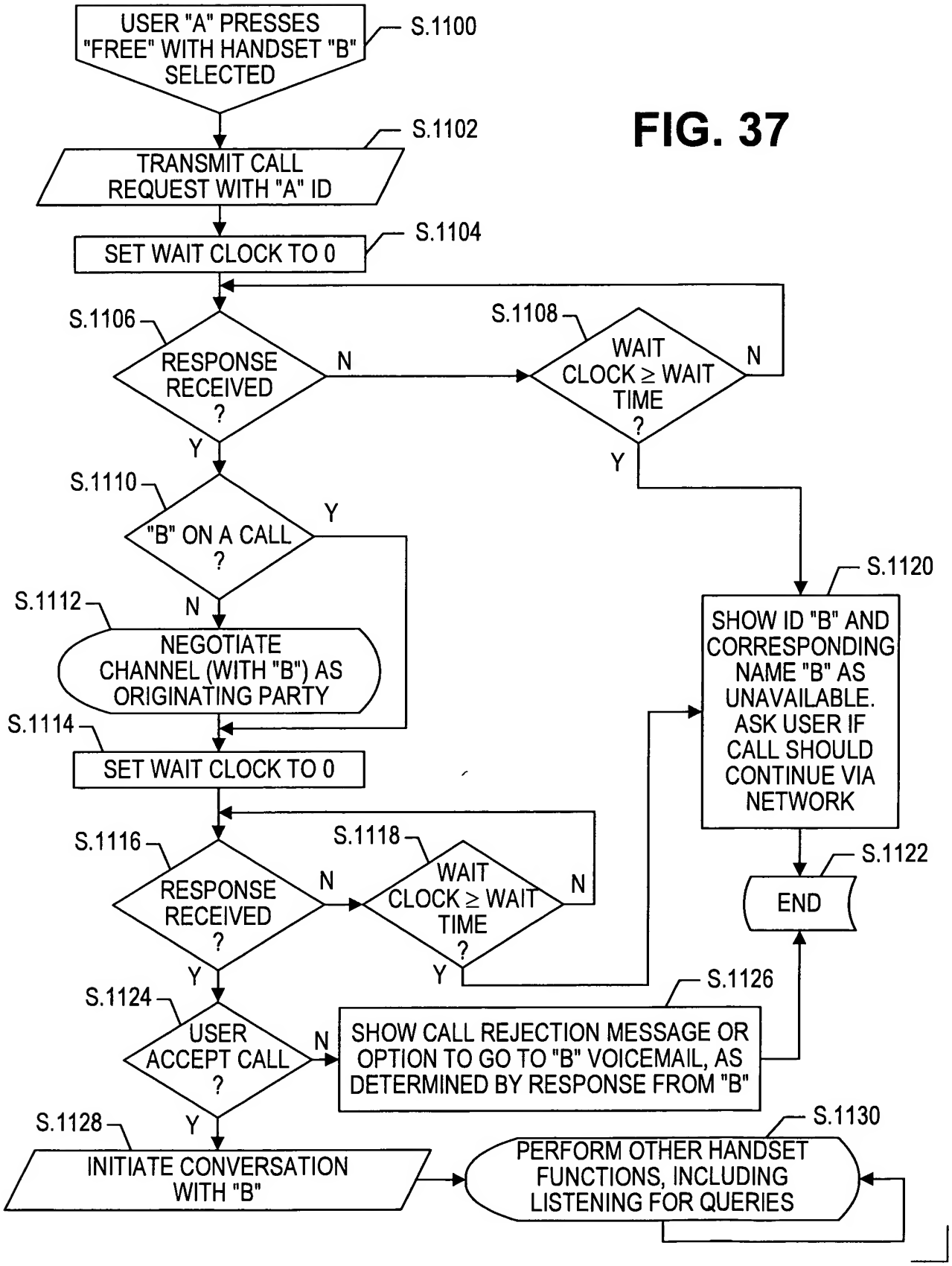



FIG. 36

REPLACEMENT SHEET

FIG. 37



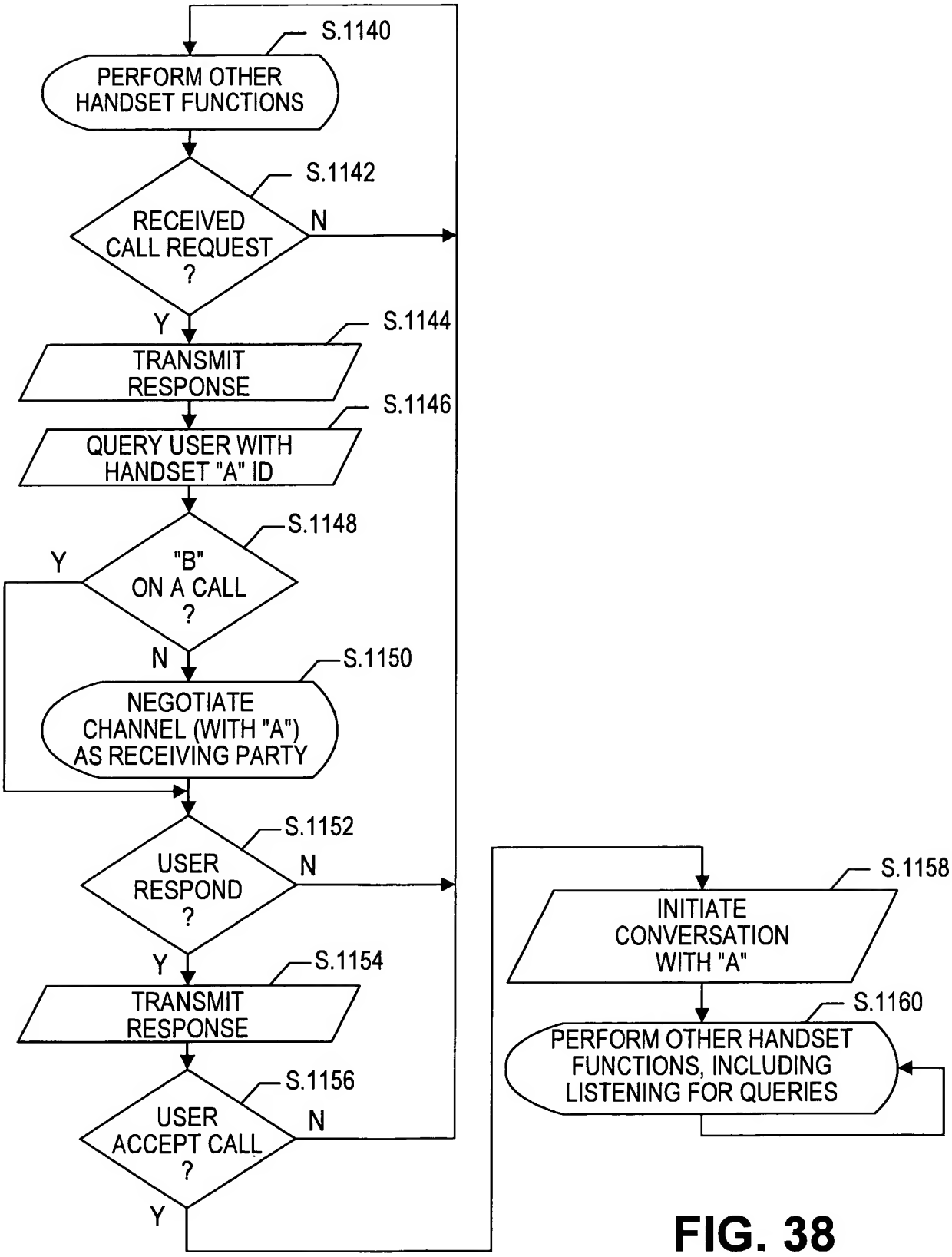

S.1140
PERFORM OTHER HANDSET FUNCTIONS
S.1142
RECEIVED CALL REQUEST ?
N
Y
S.1144
TRANSMIT RESPONSE
S.1146
QUERY USER WITH HANDSET "A" ID
S.1148
"B" ON A CALL ?
Y
N
S.1150
NEGOTIATE CHANNEL (WITH "A") AS RECEIVING PARTY
S.1152
USER RESPOND ?
N
Y
S.1154
TRANSMIT RESPONSE
S.1156
USER ACCEPT CALL ?
N
Y
S.1158
INITIATE CONVERSATION WITH "A"
S.1160
PERFORM OTHER HANDSET FUNCTIONS, INCLUDING LISTENING FOR QUERIES

FIG. 38

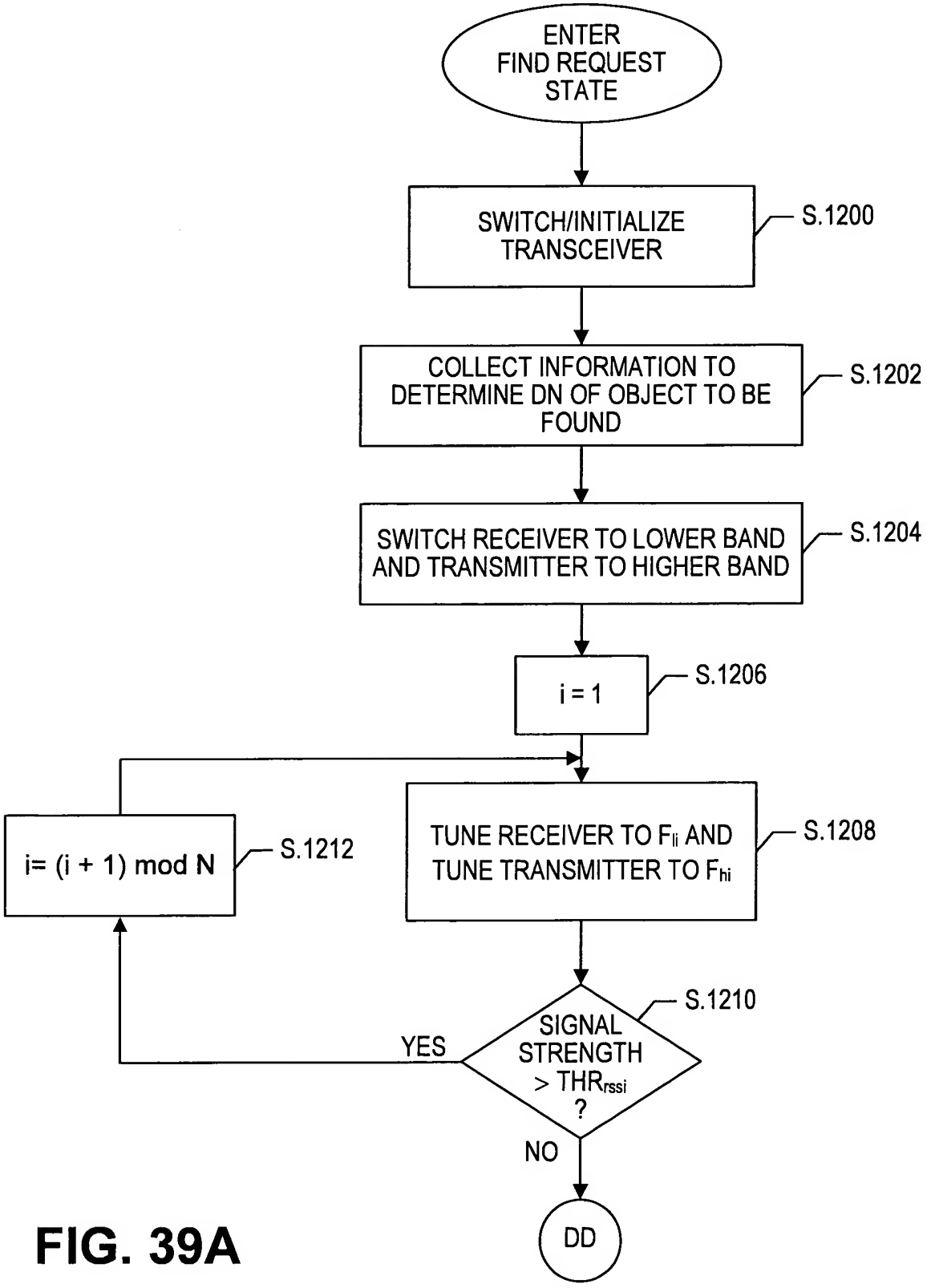

ENTER FIND REQUEST STATE
SWITCH/INITIALIZE TRANSCEIVER
S.1200
COLLECT INFORMATION TO DETERMINE DN OF OBJECT TO BE FOUND
S.1202
SWITCH RECEIVER TO LOWER BAND AND TRANSMITTER TO HIGHER BAND
S.1204
i = 1
S.1206
TUNE RECEIVER TO $F_{li}$ AND TUNE TRANSMITTER TO $F_{hi}$
S.1208
SIGNAL STRENGTH > $THR_{rssi}$ ?
S.1210
YES
NO
i= (i + 1) mod N
S.1212
DD

FIG. 39A

REPLACEMENT SHEET

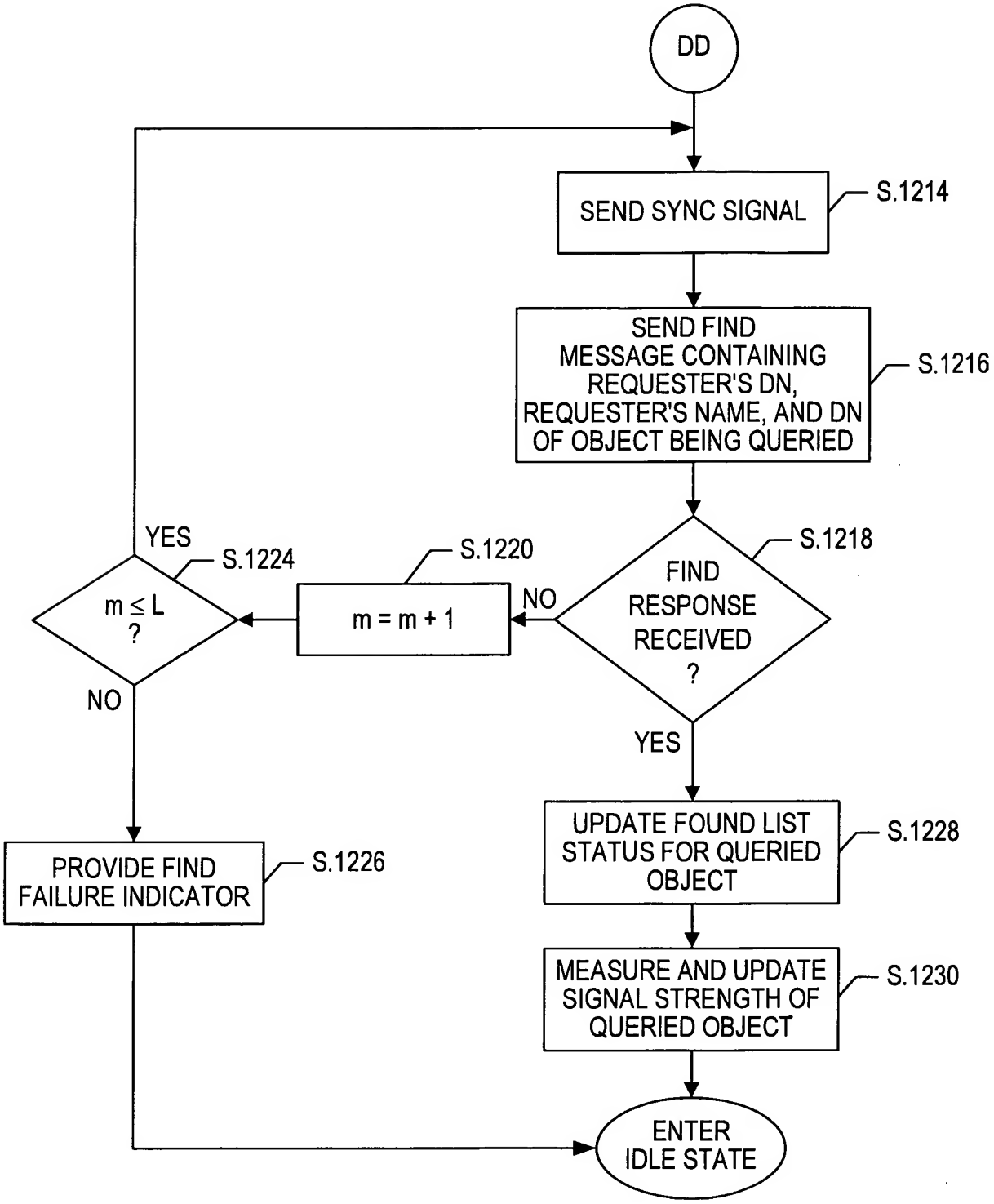



FIG. 39B

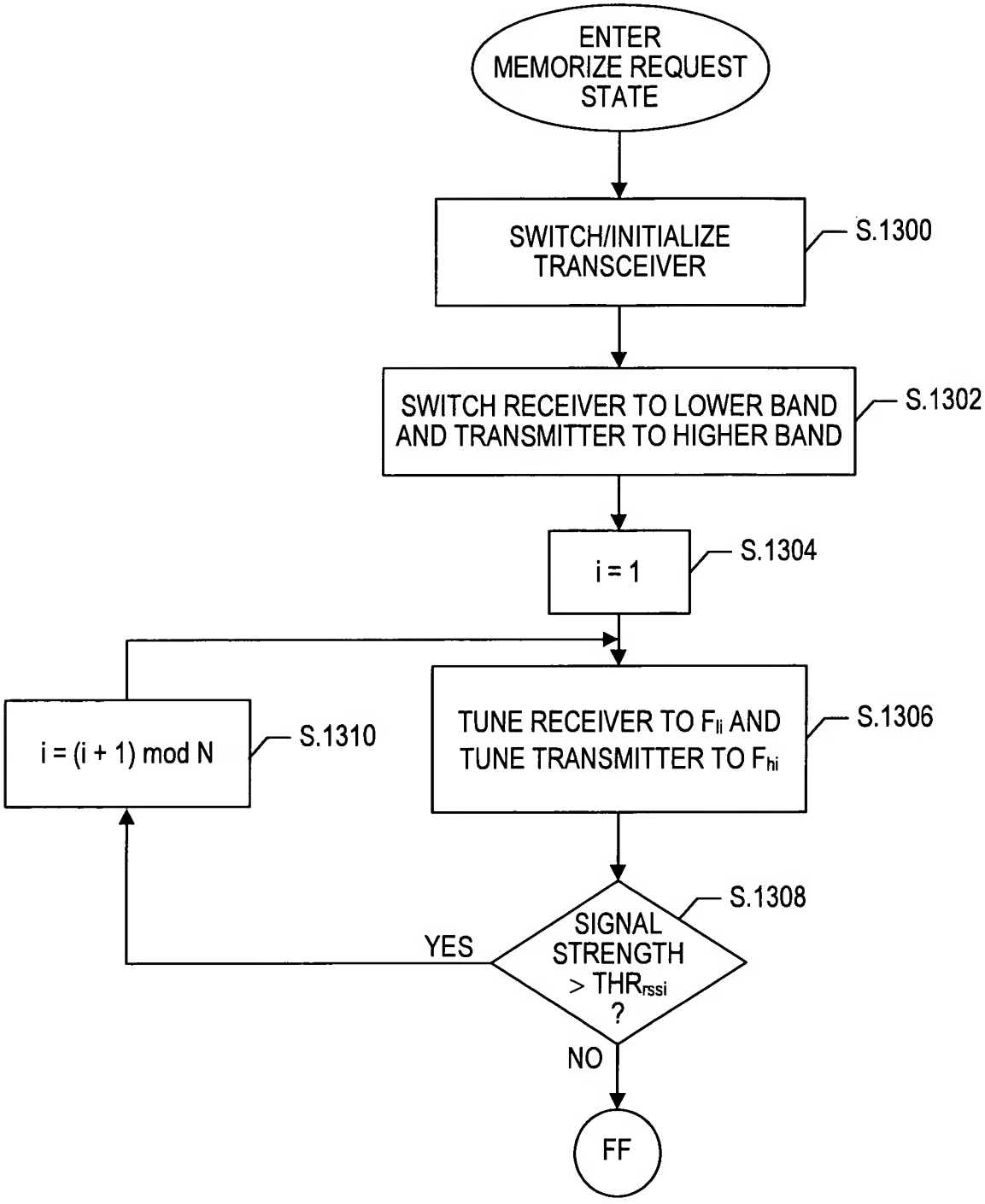

ENTER
MEMORIZE REQUEST
STATE
SWITCH/INITIALIZE
TRANSCEIVER
S.1300
SWITCH RECEIVER TO LOWER BAND
AND TRANSMITTER TO HIGHER BAND
S.1302
i = 1
S.1304
TUNE RECEIVER TO $F_{li}$ AND
TUNE TRANSMITTER TO $F_{hi}$
S.1306
SIGNAL
STRENGTH
> $THR_{rssi}$
?
S.1308
YES
NO
i = (i + 1) mod N
S.1310
FF

FIG. 40A

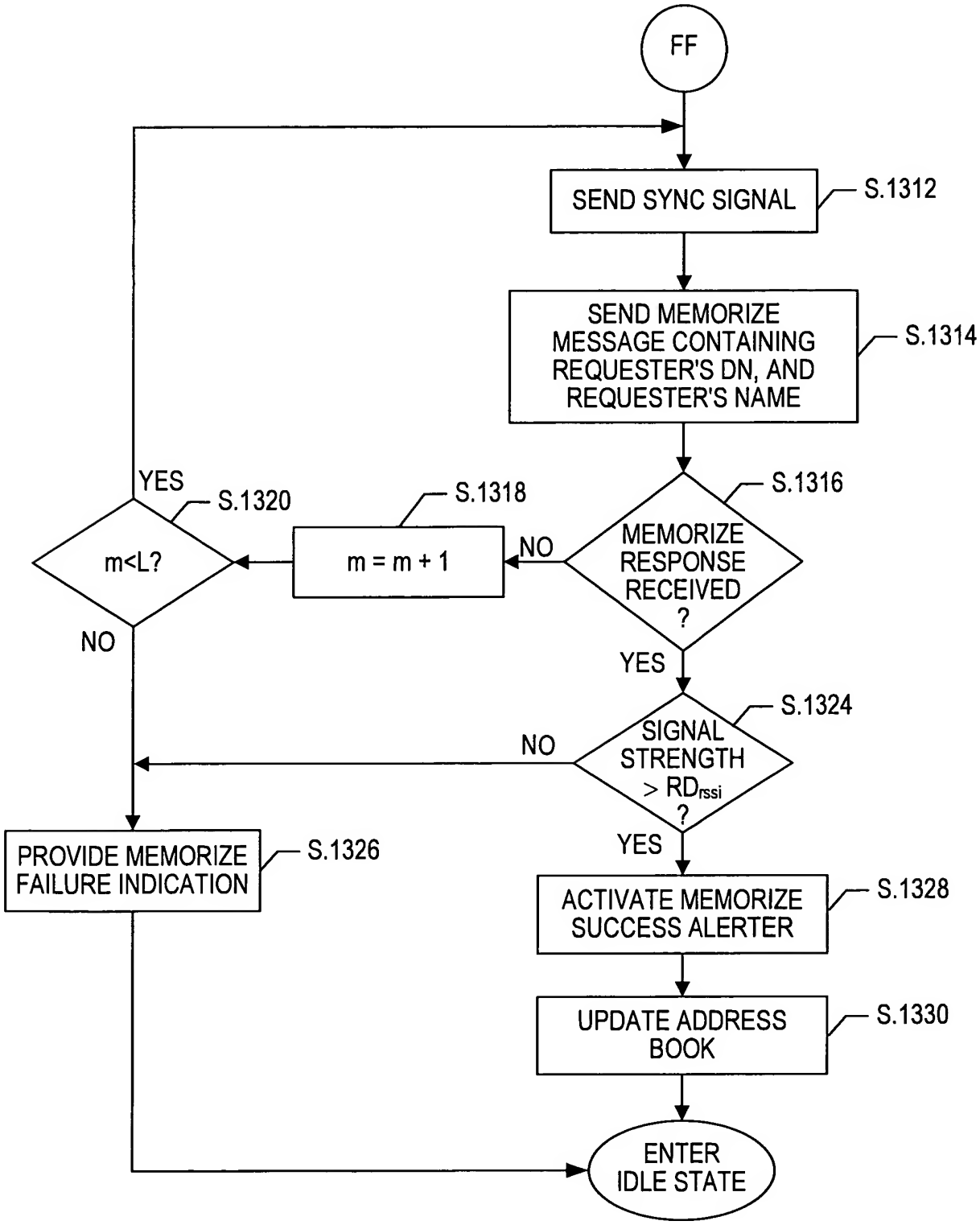

FF
SEND SYNC SIGNAL
S.1312
SEND MEMORIZE MESSAGE CONTAINING REQUESTER'S DN, AND REQUESTER'S NAME
S.1314
MEMORIZE RESPONSE RECEIVED ?
S.1316
NO
m = m + 1
S.1318
m<L?
S.1320
YES
NO
YES
SIGNAL STRENGTH > RDrssi ?
S.1324
NO
YES
PROVIDE MEMORIZE FAILURE INDICATION
S.1326
ACTIVATE MEMORIZE SUCCESS ALERTER
S.1328
UPDATE ADDRESS BOOK
S.1330
ENTER IDLE STATE

FIG. 40B

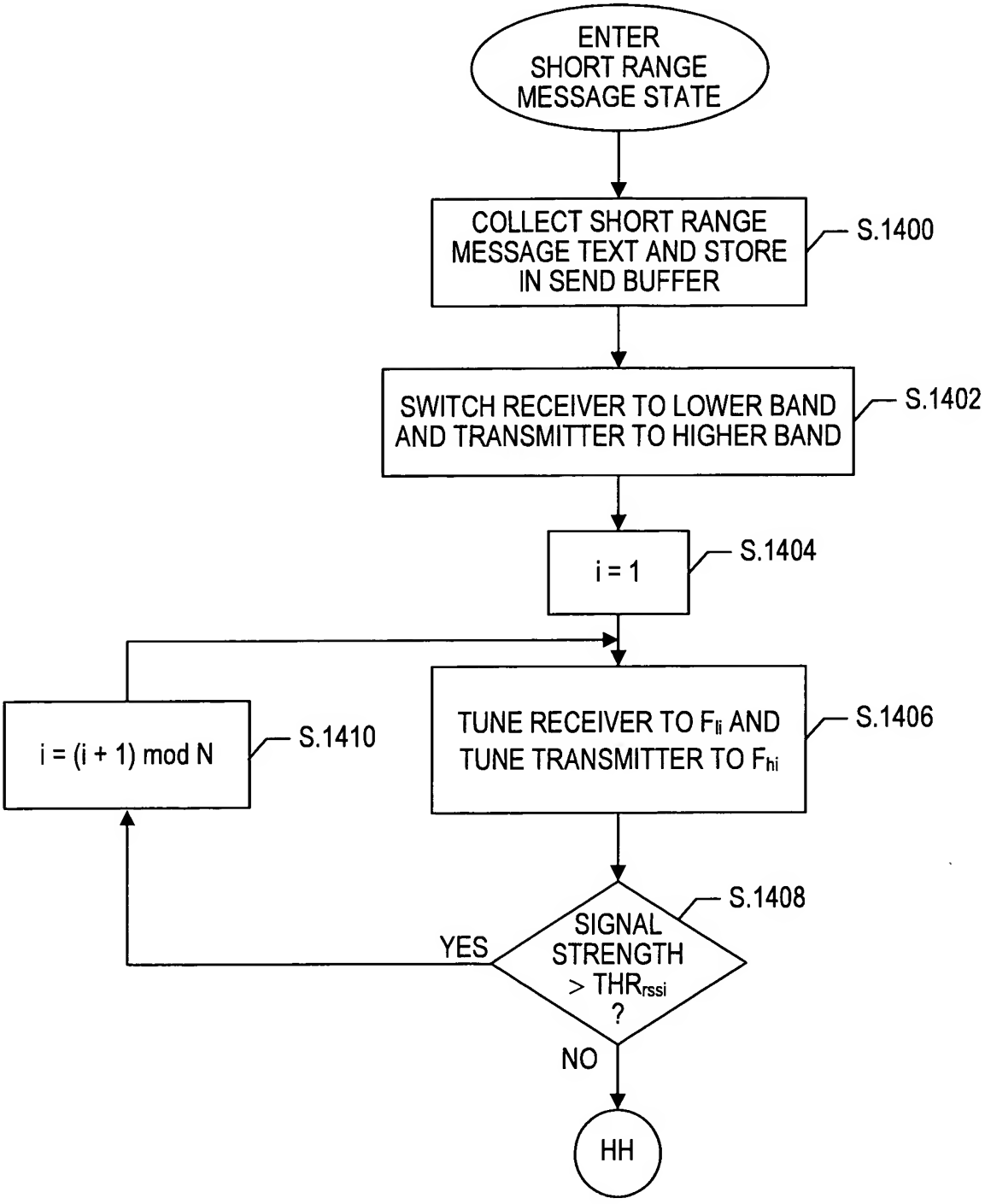

ENTER SHORT RANGE MESSAGE STATE
COLLECT SHORT RANGE MESSAGE TEXT AND STORE IN SEND BUFFER
S.1400
SWITCH RECEIVER TO LOWER BAND AND TRANSMITTER TO HIGHER BAND
S.1402
i = 1
S.1404
TUNE RECEIVER TO $F_{li}$ AND TUNE TRANSMITTER TO $F_{hi}$
S.1406
SIGNAL STRENGTH > $THR_{rssi}$ ?
S.1408
YES
NO
i = (i + 1) mod N
S.1410
HH

FIG. 41A

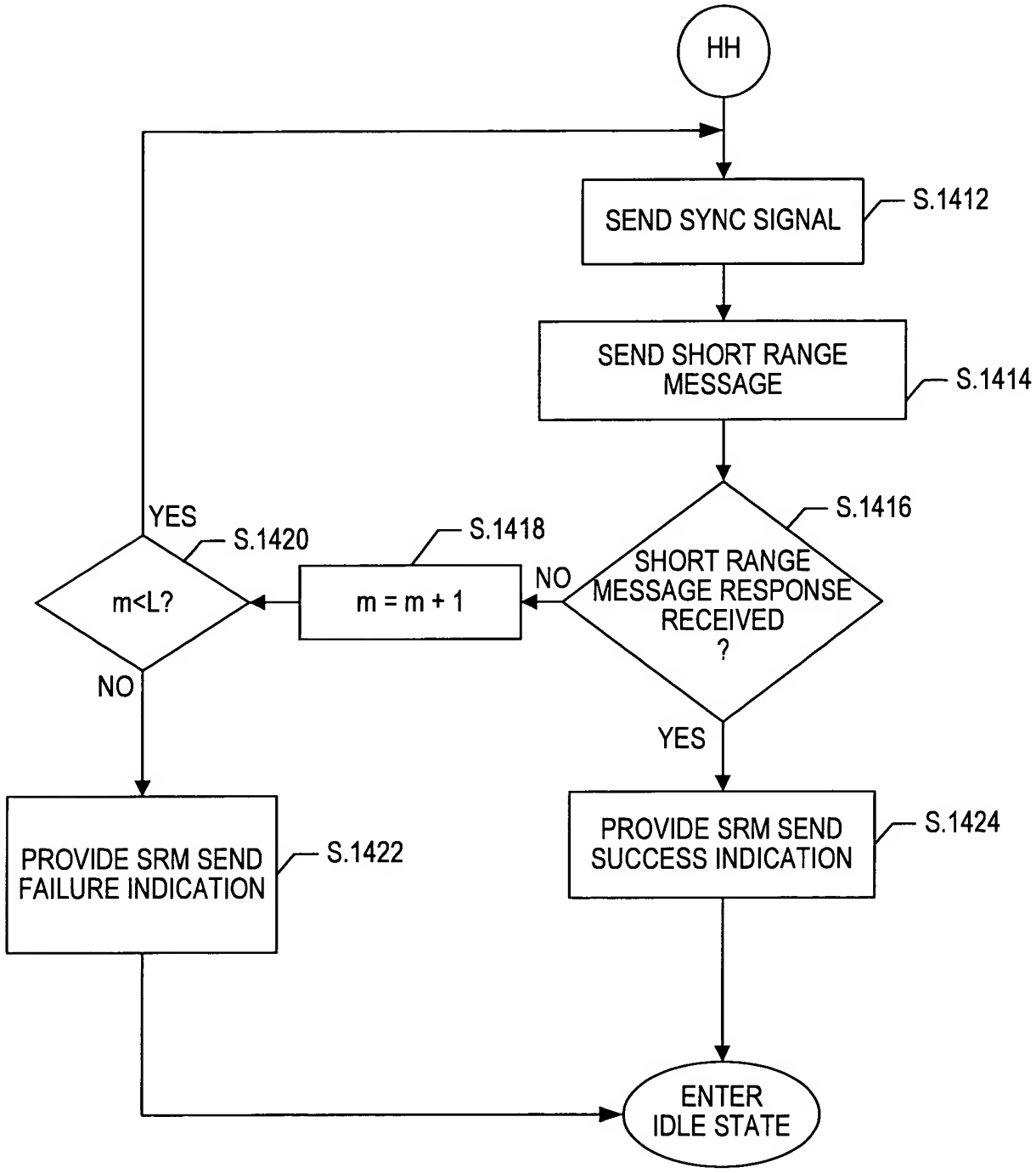

HH
SEND SYNC SIGNAL
S.1412
SEND SHORT RANGE MESSAGE
S.1414
S.1416
SHORT RANGE MESSAGE RESPONSE RECEIVED ?
NO
S.1418
m = m + 1
YES
S.1420
m<L?
NO
YES
PROVIDE SRM SEND FAILURE INDICATION
S.1422
PROVIDE SRM SEND SUCCESS INDICATION
S.1424
ENTER IDLE STATE

FIG. 41B